

S

658.3007

M455

STATE DOCUMENTS

# SMALL BUSINESS MANAGEMENT RESEARCH REPORTS



AN INVESTIGATION OF THE TRAINING REQUIREMENTS  
OF SMALL BUSINESS WITH REGARD TO THE EDUCATIONAL NEEDS  
OF PROSPECTIVE EMPLOYEES



Prepared by NORTHERN MONTANA COLLEGE for the  
MONTANA STATE PLANNING BOARD  
under a grant from the  
Small Business Administration, Washington 25, D.C.

TRIBUNE PRINTING



GREAT FALLS, MONTANA

Montana State Library



3 0864 1006 5568 0

AN INVESTIGATION OF THE TRAINING REQUIREMENTS OF SMALL BUSINESS  
WITH REGARD TO THE EDUCATIONAL NEEDS OF PROSPECTIVE EMPLOYEES

Prepared by NORTHERN MONTANA COLLEGE under a  
Small Business Administration grant awarded to the  
MONTANA STATE PLANNING BOARD

BY

Earl V. Weiser  
Project Leader - Northern Montana College

Joseph Leo Sohm  
Assistant Project Leader - Northern Montana College

**DISCARDED**

MAY 20 1969

LIBRARY  
UNIVERSITY of MONTANA  
Project Director  
THOMAS J. COLLINS  
Director, Montana State Planning Board

October 1962

## FOREWORD

This Small Business study, "An Investigation of the Training Requirements of Small Business with Regard to the Educational Needs of Prospective Employees," has been conducted and prepared under the direction of Thomas J. Collins, Project Director for the Montana State Planning Board.

The research was financed by a grant made by the Small Business Administration, United States Government, under the authority of Public Law 699 (85th Congress).

Only a limited number of copies of this report have been printed. It is available for reference in any of the Small Business Administration Offices throughout the United States or at many reference libraries. Copies of the report also may be purchased for \$2.00 directly from Northern Montana College, Havre, Montana.

Summaries of this study have been printed and are available in reasonable quantities. These summaries may be secured from SBA field offices or from the Small Business Administration, Washington 25, D.C.

The Small Business Administration assumes no responsibility for the accuracy of the data contained herein, nor does it necessarily endorse any opinions, conclusions or recommendations which may be a part of this report.

John E. Horne  
Administrator  
Small Business Administration

## LIST OF TABLES

TABLE	PAGE
I. Types of Business That Are Included in Each Occupational Group . . . . .	77
II. Present Employment and Anticipated Future Needs . .	79
III. Classifications of Employees and Training Methods .	80
IV. Evaluation of Education Levels of Employees and Recommended Training . . . . .	81
V. Restrictions Experienced in Hiring Better Trained Personnel . . . . .	82
VI. Evaluation of Present Supply of Trained Labor, Shortages Experienced, and Methods Used in Obtaining Technicians . . . . .	83
VII. Sources for Securing Labor Supply . . . . .	84



## LIST OF FIGURES

FIGURE	PAGE
1. Present Full Time and Part Time Employees . . . .	23
2. Estimates of Future Additional Employee Requirements	26
3. Firms Anticipating Addition of New Job Classification	29
4. Classification of Anticipated New Employee Needs . . .	30
5. Classifications of Present Employees . . . . .	33
6. Reaction to Educational Levels of Present Employees .	37
7. Areas of Recommended Additional Training . . . . .	38
8. Reasons for not Employing Better Trained Personnel . .	43
9. Availability of Trained Labor Supply . . . . .	46
10. In-Shop Training of Technicians Compared to Outside Shop Sources . . . . .	50
11. Comparative Sources of Labor Supply . . . . .	53

## TABLE OF CONTENTS

	PAGE
REVIEW OF THE PROBLEM . . . . .	1
METHODS OF STUDY PROCEDURE . . . . .	10
ANALYSIS OF EMPLOYER OPINIONS . . . . .	20
Present Employees . . . . .	21
General Groupings of Responding Firms . . . . .	24
Nature and Number of Firms Reporting Including Numbers and Percentages of Employees . . . . .	24
Additional Employees Anticipated in 1960's . . . . .	24
Employment Estimates for 1960's . . . . .	27
Full Time Employee Classifications . . . . .	31
Training Plans for Semi-Skilled Employees . . . . .	34
Educational Level Evaluation . . . . .	35
Training Inadequacies . . . . .	39
Tabulation of Shortcomings in Employees Reported	40
Restrictions on Hiring Better Trained Personnel	41
Status of Present Trained Labor Supply . . . . .	44
Supply of Trained Labor . . . . .	47
Firms Reporting Vacations with Workers in Short Supply	48
Sources of Technician Supply . . . . .	48

	PAGE
Effects of Automation . . . . .	49
Contact Sources for Labor Supply . . . . .	51
SUMMARY . . . . .	54
CONCLUSIONS . . . . .	63
BIBLIOGRAPHY . . . . .	73
APPENDIX . . . . .	76



## REVIEW OF THE PROBLEM

An adequately trained corps of employees is recognized as one of the key factors in the successful operation of any business or industry. It often tips the scale between success and failure. Established firms and newcomers in the field of business enterprises are equally vulnerable to the stumbling block of poorly-trained labor, but the initiates in business management are especially susceptible.

Characteristic of American free enterprise business and industry and free-choice vocational selections by young men and women, Montana businesses and Montana vocational trainees follow the pattern of seeking to correlate their needs on one hand and desires on the other without too close an evaluation of each other. This lack of correlation of employee requirements and vocational interests often leads to frustration and failure by both employers and employables.

There should be no attempt made to close this breach between needs of management and desires of trainees by directives

foreign to the democratic free enterprise system, but an awareness of the situation in each instance often is sufficient to initiate corrective measures. The principle of supply and demand may then be observed without some of the harsh experiences of inadequate information.

Through an analysis of what Montana employers believe they need in the way of trained employees to assure successful operations of their businesses and industries, a more careful and better directed counseling program for young men and women entering vocational training may be implemented.

This study is intended to measure the employee training levels of the present labor force in Montana and estimate the employee training requirements of the labor force of the next few years.

The need for an analysis of Montana employer labor requirements, particularly in the technical or semi-professional occupations, has been indicated before by those in the education and counseling field. Dr. L. O. Brockmann, president of Northern Montana College, Havre, has said, "Studies of the specific needs of the employers in Montana are not immediately available. Research work should be undertaken to determine such needs in

occupations requiring one to two years training beyond the high school."<sup>1</sup>

He further stressed the growing demand for technicians in relation to professionally educated employees by citing the bulletin, Vocational-Technical Training for Industrial Occupations, published by the Federal Security Agency, U.S. Office of Education, 1944, which listed the ratio of vocational-technical trainee to four-year college engineers in 22 country-wide industries ranging from 20 to 1 in lumbering and wood processing down to 2 to 1 in hydro-electric development. The ratio for 22 industries favoring technicians to professionals averaged out to at least 3-5 to 1.<sup>2</sup>

Dr. Charles Prosser, former director of the William Hood Dunwoody Industrial Institute, Minneapolis, Minn., was further quoted as setting the formula for technician needs to professional workers as 3 to 1.<sup>3</sup>

The relation of employee needs to educational programs of the next decade becomes evident from Department of Labor projections which anticipate that young workers under the age of

---

<sup>1</sup>L.O. Brockmann, "Education Beyond the High School with Special Reference to the Vocational-Technical Areas," Manuscript, January 16, 1958, p.1.

<sup>2</sup>Ibid., pp 2-3.

<sup>3</sup>Ibid., p 7.

25 years will account for nearly half the growth in the labor force between 1960 and 1970. The total labor force is expected to move from 73.6 million to 87.1 million in that ten-year period with young workers in the force growing from 13.8 million to 20.2 million. Counting the turnover in the ranks of labor, a total of 26 million new workers will join the American labor force while the net size of the force is increasing 13.5 million.<sup>1</sup>

This great increase in numbers of new workers in a growing labor force with strong emphasis on recruiting between one-fourth and one-fifth of them from young men and women under 25 years of age points directly to the role educational institutions can play in preparing them for their business and industrial assignments.

The same bulletin predicts the "greatest increases in employment will be in the occupations requiring the most education and training" while there will be no change in the number of so-called laborers. While 7.5 million of the new labor force are expected to be drawn from those without a high school education, it is estimated there will be 48 per cent more professional and technical workers between 1960 and 1970. Specificial-

---

<sup>1</sup>Manpower Changes in the 1960's, Department of Labor, (Washington: Government Printing Office, 1959) pp. 1-2.

ly, proprietors and managers, clerical and sales personnel, skilled craftsmen, semi-skilled operatives and service workers are expected to increase 20 to 22 per cent in this period. A further decrease of 15 per cent in farmers and farm operatives is anticipated.

The stability factor in the labor force has been keyed to educational background by charging that one out of every three dropouts among today's employees never got beyond the eighth grade in their education programs. And unemployment is significantly higher among the school dropouts.<sup>1</sup>

The atomic age of science and industrial automation, though just beginning to make itself felt, cannot help but radically revise needs for more highly trained employees. Not only is the international survival race producing a whole new horizon in energy-producing and using technology, but the domestic industrial structure is facing the pressure of consolidation into more economic units. Not only has the employment picture changed from 100 years ago when four out of five were self-employed to today's four out of five being employees of others, but the total floor of educational needs for employees has moved up sharply in the present industrial age. This trend is bound to be accelerated in the unfolding atomic age at hand.

---

<sup>1</sup>Ibid., pp. 4-7.



Newell Brown, assistant secretary of labor for employment and manpower, set out in an article in Higher Education some of the changes that can be expected in the nature of work and training of workers.

The American manpower structure faces an extensive change-over during the 1960's. First a substantially larger number of people will be seeking work in the American labor market. Second, there will be a continuation, probably even an acceleration, of the trend toward white collar occupations---the jobs we associate with higher education and training. Third, there will be a rise in the level of training and educational requirements of jobs all across the board.<sup>1</sup>

He visions the majority of the new recruits in the working force going into the service industries such as finance, insurance, trade and the professions. On the other hand, growth in the labor corps engaged in the production of goods will be curtailed by greater mechanization, automation and new production techniques.

By 1970, Brown reports "about 45 per cent of all jobs in the country may be in the white-collar category and only 36 per cent in the blue collar category..."<sup>2</sup> The remainder will be in farming, which has lost five million workers since 1940 and will likely lose another million by 1970, and various types of service activities.

---

<sup>1</sup>Newell Brown, "The Manpower Outlook for the 1960's----Its Implication for Higher Education," Higher Education, Vol. XVI, No. 4, December 1959 (U.S. Department of Health, Education, and Welfare, Office of Education: Washington, D.C.), p. 3.

<sup>2</sup>Ibid.



He anticipates a 60 per cent rise in the number of professional, technical and similar type workers by 1970 with engineering and the sciences among the fastest growing professions. Where there was one scientific or technical worker for every 100 people in the labor force of 20 years ago, this ratio has become one for every 32 workers today. And the trend will continue.

Montana, as one of the fastest growing states, will feel the full effects of this work evolution. U.S. News & World Report lists the state as among those now growing at a more rapid rate than was anticipated even three years ago. The economic unit of that magazine projects a 17.7 per cent growth in Montana's population during the next decade to 826,000.<sup>1</sup>

The nature and dimensions of Montana business and industries are likely to undergo a transition the same as the labor force. The future of small businesses appears the most hazardous, according to evaluations elsewhere in the nation.

George S. Odiorne, professor at the University of Michigan's School of Business and director of its Bureau of Industrial Relations as well as consultant to a number of large and small companies, reported in Harper's Magazine that "the odds

---

<sup>1</sup>"The Latest on How States Are Growing," U.S. News & World Report, Vol. XLVIII, No. 9, February 29, 1960, (United States News Publishing Corporation: Washington, D. C.), p. 71.

are that only one in five small businesses will survive ten years. In fact, the median age of 4,500,000 firms in this country is seven."<sup>1</sup>

He reports Dun and Bradstreet, that financial analysis firm which keeps a close check on business health, figures nine out of ten small business failures are caused by lack of experience or incompetence. This has its implication for workers who find it more hazardous to be employed by a small firm than a large one, as surveys in New Jersey verify.<sup>2</sup>

In the light of what is ahead for Montana business and industry, the changes in the nature of the work, the greater emphasis on additional training beyond high school for the new technology, the growing needs in some areas of business and industry as contrasted with the shrinking requirements in others, and the hazards of initiating new small enterprises, a closer look at what this may mean to Montana businesses and training institutions seems advisable.

One of the means of bringing this picture into sharper focus is an analysis of what Montana employers feel they have discovered about their own operations. What part does an adequately trained labor force play in their businesses? How do they evaluate the training level of their present employees as

---

<sup>1</sup>George S. Odiorne, "How Small Business Cuts Its Throat, " Harper's Magazine, Vol. 220, No. 1319, April 1960 (Harper and Brothers: New York), p. 47.

<sup>2</sup>Ibid.

to adequacies or inadequacies? What do they anticipate they will need in the way of additional trained personnel in the next five to ten years and in what lines of training? What shortcomings in trained personnel do they experience now and what shortcomings do they anticipate?

The answers to these questions could be of assistance in supplementing or modifying present educational programs. The responses could be used as a better guide to counselors of young men and women who will be expected to fill the labor needs of the future. The trial-and-error method of young trainees cannot be foreclosed, but their chances of finding work in some occupational areas as contrasted with others could be better predicted and brought to their attention. The business and industry of Montana could look with better assurance to the new crops of employees for the type of training that will be required to keep the state economy abreast of evolving trends and developments.

This is what this study proposes to provide in some measure.

## METHODS OF STUDY PROCEDURE

To strive for an adequate cross-section opinion of Montana employers in all businesses and industries operating in the state, the survey form in this study was submitted to all employers covered by the Montana Unemployment Compensation Act. This included all sizes of industrial concerns, but the number in Montana that would qualify as large under the Small Business Administration's definitions was relatively few. Though these SBA limitations vary generally from 250 to 500 employees or in dollar volume of business in the different categories of businesses,<sup>1</sup> only two responding firms reported full-time employees in excess of 250 and only six firms reported combined full-time and part-time employees in excess of 250.

All six of these firms, however, have been included in the final tabulations. They do represent 20 per cent of the total employee reported in the study, 7,984 of the 39,883 included. An employees break-down for these six firms reveals 53 per cent of their employees are full-time and 47 per cent are part time. This compares with an overall 65 per cent full-time and 35 per cent part-time employee percentage for the entire study.

---

<sup>1</sup>Small Business Size Standards, Federal Register.

In the major portion of the study analysis, done by firm count and percentage only, however, the impact of these six firms is insignificant.

Their impact, none-the-less, is significant in the categories of construction, manufacturing and mining, where their employee numbers overshadow and predominate the final tabulations. Again, this is not significant in the analysis when a firm count is used instead of an employee tabulation. Four construction firms with more than 250 employees load the results heavily to part-time workers, 3,752 to 400 full-time employees, as compared with a tally for all 278 construction firms responding of 4,012 part-time employees to 2,416 full-time employees .

In the manufacturing category, the one large firm reporting indicated all employees as full-time in the number of 582, as compared with 1,406 full-time and 334 part-time employees for all 72 responding manufacturing firms.

In the mining category, the single large firm reporting of the 18 sending in responses represents all its 3,250 employees in the full-time category as compared with 3,649 full-time and 152 part-time employees in the overall analysis.

There was little significant variation in the percentage of employees in professional, technical, managerial and semi-skilled classifications for the large firms and the overall study reports.



Firms, regardless of size, reporting from out-of-state headquarters were excluded, but reports from local branches of large firms were included. These branches of large firms were considered autonomous as far as labor recruiting on a local basis was concerned, though general policies on hiring and training may have been established in out-of-state offices. Branches of oil products and insurance and real estate firms were the most numerous among those reporting, six oil products branch firms and seven insurance and real estate branch firms being listed. But in only one instance in each category did the in-state branch firms have employees numbered in excess of 100.

Again, it must be taken into consideration when numbers of employees are variously analyzed that state branch offices or firms of major national offices or businesses have been included. As nearly as could be classified as reports of branches of national organizations, the following categories were affected: retail distribution, 4 per cent of total employees reported were listed by national organization branches in the state; insurance and real estate, 26 per cent; restaurants, bars, hotels and motels, 10 per cent; wholesale distribution, 18 per cent; manufacturing, 45 per cent; transportation, 20 per cent; oil products, 41 per cent; mining, 91 per cent; government, 34 per cent. Other categories were not affected.



But the influence remained relatively insignificant when the analysis was on a company count or percentage basis.

The framing of the questionnaire form was designed to cover the information desired, but to be direct and simple to invite as great participation as possible. Some features involved projections for which employers could be expected to provide only estimates. However, such answers were believed important to the study. One question also involved the extent of automation in Montana industry which was known to be relatively light. It was also recognized a job analysis would be difficult for many employers, but careful responses could be invaluable to the results.

A classification of business and industry was requested on a check list modified from the categories in the Dictionary of Occupational Titles to serve the survey purposes.

The questionnaire was subjected to a pilot test among selected business, industrial and government firms and agencies in Great Falls, Havre, and Chinook, Montana. These communities were selected because they represented the largest city in the state, a medium-sized community as Montana communities go, and a small, strictly rural community.

Mimeographed copies of the proposed questionnaire form were mailed to six small industries, twelve professional offices, twelve automobile, recreation, food service, insurance and real estate and banking firms, and two government agencies

as a cross-section of employer activities in the state.

Instructions were enclosed to fill out the forms and hold for personal contact. The assistant project director then made the contacts, picked up the questionnaires, discussed their comprehensiveness, their clarity or ambiguity, and their purpose.

Suggestions, though minor, were incorporated in the final revised forms. There was no further testing of the form before it was printed and mailed to employers throughout the state during November 1959. A stamped, self-addressed envelope accompanied each mail-out.

A general news release to all daily newspapers of Montana paralleled the submission of the questionnaire. This release explained the nature and purposes of the study.

As returns came in, they were filed according to the classification of the businesses and industries. Not until late February 1960 when the rate of mail-backs dwindled to a trickle did the tabulation of results begin in earnest. Even then a few returns were received as late as August 1960.

Of the total of 16,368 questionnaires mailed to Montana employers, 3,634 or 22.2 per cent were returned by January 1960. Of the returns, 867 were invalidated for insufficient response, leaving 2,767 or 76 per cent of the mail-backs to be figured in the final tabulation of results. This usable number amounted to 16.9 per cent of the total mail-outs.

Two reasons that incomplete survey reports were made, as indicated by notations on many of the incompleted returns, were: First, many of the businesses in Montana are small and employ only members of the immediate family; and second, an additional group of businesses do employ outside help, but the skill required of the employees is insignificant at present. These two groups of employers, therefore, felt they could supply but little information requested or the information sought did not apply to their particular situation.

A sample of the survey form follows on successive pages.

**An Investigation of the Training Requirements of Small Business  
with Regard to the Educational Needs of Present  
and Prospective Employees**

OFFICE OF THE PRESIDENT

**NORTHERN MONTANA COLLEGE  
HAVRE, MONTANA**

November, 1959

To the Employers of Montana:

You can help greatly a survey of the training requirements of small businesses with regard to the educational needs of present and prospective employees being made by Northern Montana College in cooperation with the Small Business Administration, Helena, Montana, and directly with the Montana State Planning Board. You may have read in the papers, too, that several of the units of the University of Montana are making other studies of interest to small business organizations in Montana.

Many employers say that they need better trained auto mechanics, carpenters, diesel technicians, sales people, and so forth. What this study attempts to do is to get the facts. As you well know, the success of a small business depends, in part, on the opportunity to hire prospective employees who are well-trained for available positions in small businesses. We anticipate securing necessary data to help modify or supplement curricula in state schools and colleges.

Your cooperation in completing this check list is much appreciated. We hope for 100 per cent returns, so will you kindly take the few minutes necessary to make the checks and fill out the blank spaces, as directed. We have tried to keep the forms as simple as possible.

Sincerely yours,



L. O. BROCKMANN  
President

I. A. Name of Business or Industry.....

B. Address .....

II. Type of Business or Industry: Please check the one that applies or write in what you think is a better description of your business or industry at the end of the list.

- |                                |  |
|--------------------------------|--|
| 1. .... Agriculture            | 9. .... Manufacturing                                  |
| 2. .... Communications         | 10. .... Mining  |
| 3. .... Construction           | 11. .... Retail Distribution                           |
| 4. .... Federal Government     | 12. .... Service Industry (Laundry, barber shop, etc.) |
| 5. .... Finance                | 13. .... State Government                              |
| 6. .... Forestry               | 14. .... Transportation                                |
| 7. .... Insurance, Real Estate | 15. .... Wholesale Distribution                        |
| 8. .... Local Government       | 16. .... Others .....                                  |

III. A. What is the total number of persons you have employed during the year 1959 or during your last fiscal year?

..... Full Time                      ..... Part Time                      ..... Total

B. What are your future needs? Estimate as far as possible:

1. For the regular jobs you will have available in the next 2 years? .....
2. Next 5 years? ..... 3. Next 10 years? .....

C. What new jobs do you anticipate having which are not now on your payroll classification?

.....

IV. Job Classification or Analysis.

Please insert the number of workers you have in the following fields by their major groups: professions, technical vocations, and semi-skilled work.

A. PROFESSIONS (Four or more years of education beyond high school required).

..... Accountancy	..... Chiropractic	..... Nursing
..... Aeronautics	..... Dentistry	..... Optometry
..... Agriculture	..... Engineering (all types)	..... Osteopathy
..... Architecture		..... Pharmacy
..... Art	..... Forestry	..... Physics
..... Auditing	..... Geology	..... Religious Work
..... Biological Science	..... Home Economics	..... Social Work
..... Business Administration	..... Journalism	..... Veterinary Science
	..... Law	..... Other .....
..... Chemistry	..... Medicine	..... Other .....
..... Chiropody	..... Natural Resources	..... Other .....



B. TECHNICAL VOCATIONS (One to two years of education beyond high school required).

Agriculture

- Farm, Ranch Management
- Farm Machinery Repair
- Ag. Office Management

Automotive and Diesel

- Automobile Mechanics
- Diesel Mechanics

Beauty Culture

- Beauty Technology
- Beauty Parlor Management

Building

- Construction Work
- Contracting

Cabinet Making

- Cabinet Finishing
- Lumber Milling

Drafting

- Architectural Drafting
- Electrical Drafting
- Mechanical Drafting
- Structural Drafting
- Topographical Drafting

Commercial Art

- Sketching and Design

Electrical

- Appliance Repairing
- Electronics
- Construction Wiring
- Line Wiring
- Motor Repairing

Food Service

- Food Preparation
- Shop Management

Lumbering, Wood Processing

- Forest Technology
- Mill Technology
- Office Technology

Machine Shop

- Machine Operating
- Tool and Die Making

Merchandising

- Department Managing
- Merchandise Buying
- Selling
- Services and Servicing
- Store Managing

Metal Mining

- Mine Technology
- Office Technology
- Plant Technology

Office Work

- Clerking and Typing
- General Secretaryship
- Legal Secretaryship
- Medical Secretaryship
- Stenography

Oil Producing, Refining

- Field Technology
- Office Technology
- Plant Technology

Practical Nursing

- Practical Nursing

Printing Trades

- Linotype Operating
- Makeup
- Press Operating
- Stereotyping

Radio and TV

- Radio Repairing
- Technology
- Telegraphy
- TV Repairing

Railroading

- Office Technology
- Road Technology
- Shop Technology

Refrigeration

- Refrigeration Mechanics
- Refrigeration Technology

Sheet Metal

- Aircraft Metal Working
- General Metal Working
- Layout Designing

Welding

- Acetylene Operating
- Arc Operating

Others

- 
- 
- 
- 
- 
- 
- 

C. Semi-skilled Work (Virtually no specific job skills required in advance, but high school graduation may be required)

1. How many semi-skilled workers do you employ? .....

2. When do you train the semi-skilled workers?

----- On the job ----- After hours ----- Other ways .....

D. How many employees do you employ in managerial or supervisory (professional level) capacities, with little or no formal education? .....

(Please Turn To Next Page)



- V. A. Are you satisfied with the education level of your present technician or semi-professional employees?  
 Yes..... No..... Uncertain.....
- B. If answer is no, in what areas would you recommend that additional training for future employees be directed?  
 ..... General education (liberal arts)  
 ..... Technical (trade) training  
 ..... Combination of first two  
 ..... Other (Specify) .....
- C. Do you feel the size or nature of your business restricts you from hiring better trained personnel?  
 Yes..... No.....
- D. If answer is yes, check or write in why this has not been possible.  
 ..... Better trained help isn't available  
 ..... Can't afford salaries of better trained personnel  
 ..... Other reason (Specify) .....
- E. What, if any, shortcomings have you found in the training of your present employees? Specify, whether professional, technician, or semi-skilled employees.....
- VI. A. How is your present supply of trained labor?  
 Abundant..... Adequate..... Short.....
- B. What, if any, type or types of trained employees seem in shortest supply in your business or industry?  
 .....
- C. Check sources on which you depend for securing your labor supply. (More than one may be checked)  
 ..... Voluntary application ..... College Placement Bureaus  
 ..... Personal contact ..... Unions  
 ..... State Employment services ..... Upgrading employees  
 ..... Advertising ..... Other type contacts
- D. In the technical vocations field alone, what percentage of labor do you expect to obtain:  
 .....% By in-shop training and upgrading present employees  
 .....% From outside present labor force.  
 \_\_\_\_\_  
 100 %
- VII. What, if any, has been the effect of automation in your business or industry? .....
- VIII. If you have a mimeograph or printed job analysis of the various jobs in your business or industry, please enclose a copy with your return.

Your cooperation in completing this check list is deeply appreciated. Please use the enclosed self-addressed, stamped envelope to return the form to us immediately. It will take several months for us to get all of these forms checked and results put together for publication purpose. Thanks a million.

Sincerely,

*Earl V. Weiser*

E. V. WEISER, Director  
 Public Information and Research

## ANALYSIS OF EMPLOYER OPINIONS

Montana is not unique in the nature of its businesses and industries. It is, however, distinctly still a raw products and service region, with relatively minor industrial development.

Categories of business fall primarily in the service class. Because of this a breakdown into logical categories appeared relevant to this study to provide a better picture of the main services. (Table II, Appendix).

Automotive and retail distribution headed the list of categories in the service field and all fields, for that matter, among the responses received. Medical, miscellaneous services, insurance and real estate, wholesale distribution, and law and accounting were also high.

But in the productive or creative industrial categories, only construction ranked high in number of responses. Even responses in agriculture in Montana's primary agricultural economy were well down the list in numbers. Manufacturing, oil products, forestry, mining and engineering were likewise in the lower half of responses numerically.

The breakdown of the 2,767 businesses and industries whose questionnaires were used in the survey is: Automotive (367),

retail distribution (295), construction (278), medical (240), miscellaneous service (211), insurance and real estate (193), restaurants, bars, hotels, and motels (164), wholesale distribution (124), law and accounting (124), finance (96), food distribution (76), agriculture (75), recreation and entertainment (75), manufacturing (72), transportation (71), oil products (70), communications (66), pharmacy (63), forestry (57), mining (18), engineering (18), and government (14).

#### PRESENT EMPLOYEES

The total of 2,767 usable responses reported a total of 39,883 employees, but only 65 per cent of these were full-time employees, the other 35 per cent being classed in the part-time employment group.

Mining led the list in full-time employment of its labor force with 96 per cent. It was followed by the finance grouping with 93 per cent full-time employees and manufacturing with 84 per cent.

On the other hand, recreation and entertainment businesses reported only 16 per cent of full-time employees. This might be expected in an activity that is either highly seasonal or combined with part-time or full-time work in other occupations. Construction employees, also, ran to only 38 per cent on full-time with

the remainder on a part-time basis due to the seasonal nature of the activity.

FIGURE I

## PRESENT FULL TIME AND PART TIME EMPLOYEES

23

Numbers

1000

2000

3000

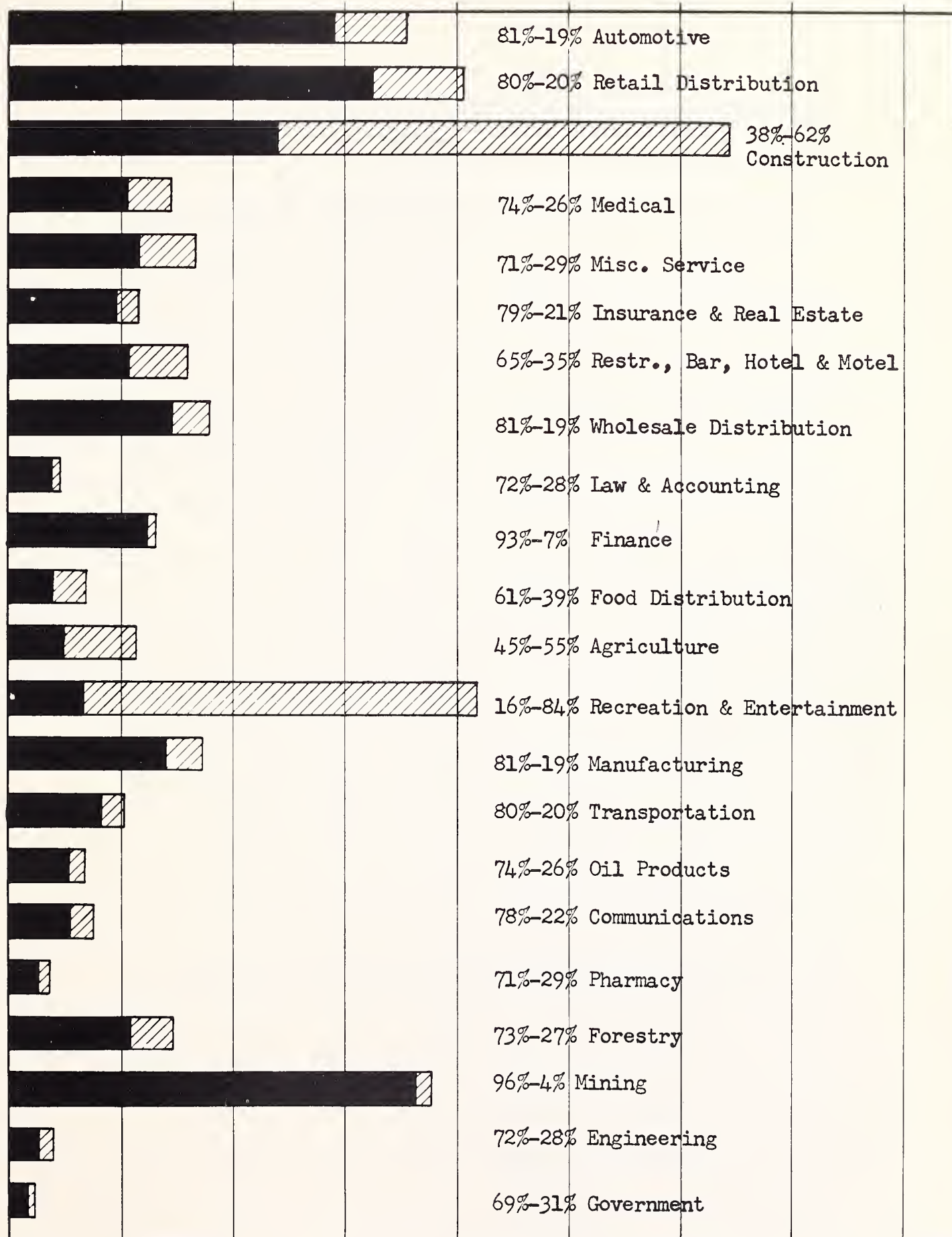
4000

5000

6000

7000

8000



Full Time Employees



Part Time Employees



# GENERAL GROUPINGS OF RESPONDING FIRMS

- |                          |   |
|--------------------------|---|
| 1. Service Business      | Automotive, Retail Distribution, Medical, Miscellaneous Service, Insurance and Real Estate, Restaurants, Bars, Hotels and Motels, Wholesale Distribution, Law and Accounting, Finance, Food Distribution, Recreation and Entertainment, Transportation, Communications, Pharmacy, Government. |
| 2. Productive Industries | Construction, Agriculture, Manufacturing, Oil Products, Forestry, Mining, Engineering.  |

Of the 2,767 firms reporting, 78 per cent fell in the service business category and 22 per cent fell in the productive industry category. Service businesses are defined as those dealing in distribution of products, skills, or performances; productive industries are those defined as adding or making usable natural or creative products and facilities. For those two groupings, the 15 service business categories reported a higher percentage of full-time employees with 67 per cent to 63 per cent for the 7 productive industry categories.

## NATURE AND NUMBER OF FIRMS REPORTING INCLUDING NUMBERS AND PERCENTAGES OF EMPLOYEES

	No.	Full Time		Part Time		Total
		No.	Pct.	No.	Pct.	
Service Businesses	2,179	16,239	67%	7,955	33%	24,194
Productive Industries	588	9,883	63	5,806	37	15,689



## ADDITIONAL EMPLOYEES ANTICIPATED IN 1960'S

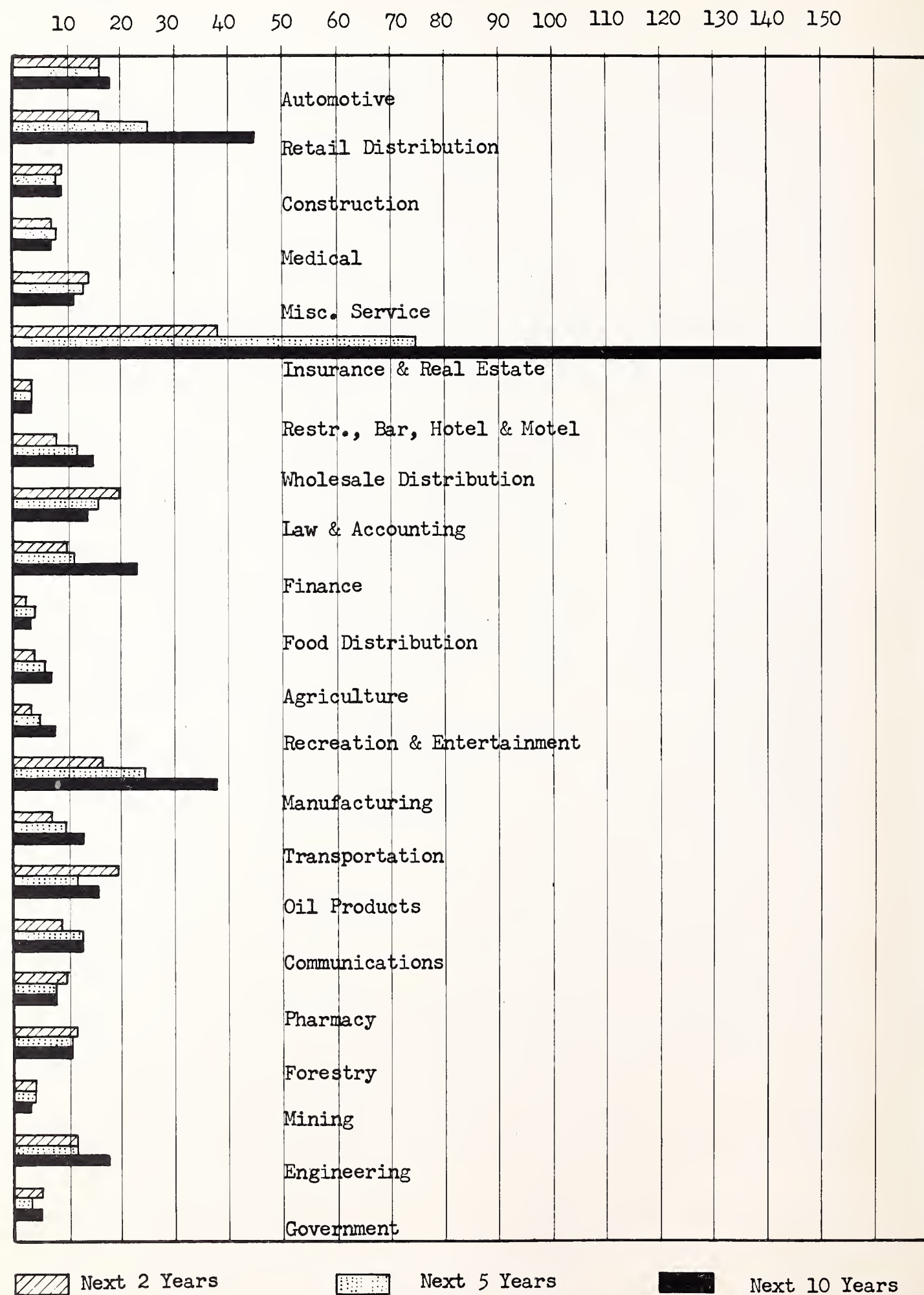
Moving from reporting actual present employee totals to estimates of additional needs during the next two years, five years, and ten years, a considerable variation in estimates was evident by occupational categories. A 10 per cent increase in full-time and part-time employees was anticipated by 1962, a 13 per cent increase by 1965, and a 19 per cent increase by 1970.

Insurance and real estate businesses anticipated the greatest gain with a surprising 150 per cent. Retail distributors figured on a 45 per cent increase. It was followed by manufacturing with 38 per cent in third place. On the other hand, restaurant, bar, hotel and motel operators visioned no more than a 3 per cent employee increase by 1970. Medical, structural, agricultural, recreational and entertainment, pharmaceutical and governmental employers--federal, state, and local--figured on almost an equally low employee increase in the next ten years, ranging from 5 to 9 per cent.

The following nine categories tended to be the most optimistic of the twenty-two studied. These businesses and industries and their respective estimates of additional employees needs over their present reported total employment were for the next two years, five years, and ten years respectively: Automotive 16%-16%-18%, retail distribution 16%-25%-45%, insurance and real estate 38%-75%-150%, wholesale distribution 8%-

## ESTIMATES OF FUTURE ADDITIONAL EMPLOYEE REQUIREMENTS

Percentages



12%-15%, law and accounting 20%-16%-14%, finance 10%-11%-23%, manufacturing 17%-25%-38%, oil products 20%-12%-16%, and engineering 12%-12%-18%.

It should be noted that law and accounting firms reported a declining need for additional help after the first two years, from 20 per cent to 14 per cent. Oil products firms also anticipated a net drop between the two-year and the ten-year periods, though there was a pickup in the last five years.

In grouping the responses by service businesses and productive industries, the service group showed the greatest percentage of additional employees anticipated in the next decade. That group anticipated 11 per cent more in their labor force in the next two years, 15 per cent more in the next five years, and 24 per cent more in the next ten years.

By contrast the productive industries estimated only 9 per cent for the next two- and five-year periods and only 11 per cent more in the next ten-year period.

EMPLOYMENT ESTIMATES FOR 1960'S  
(Percentages figured against reported present employee totals)

	<u>Two Years</u>		<u>Five Years</u>		<u>Ten Years</u>	
	No.	Pct.	No.	Pct.	No.	Pct.
Service Businesses	2,683	11%	3,760	15%	5,822	24%
Productive Industries	1,408	9	1,490	9	1,772	11

Firms anticipating the addition of new jobs not presently on their payroll classification amounted to 624 or 23 per cent of the total number of firms reporting. This may serve as some indication of expected changes in office or industrial techniques or creation of additional departments to facilitate handling the business or industrial activities.

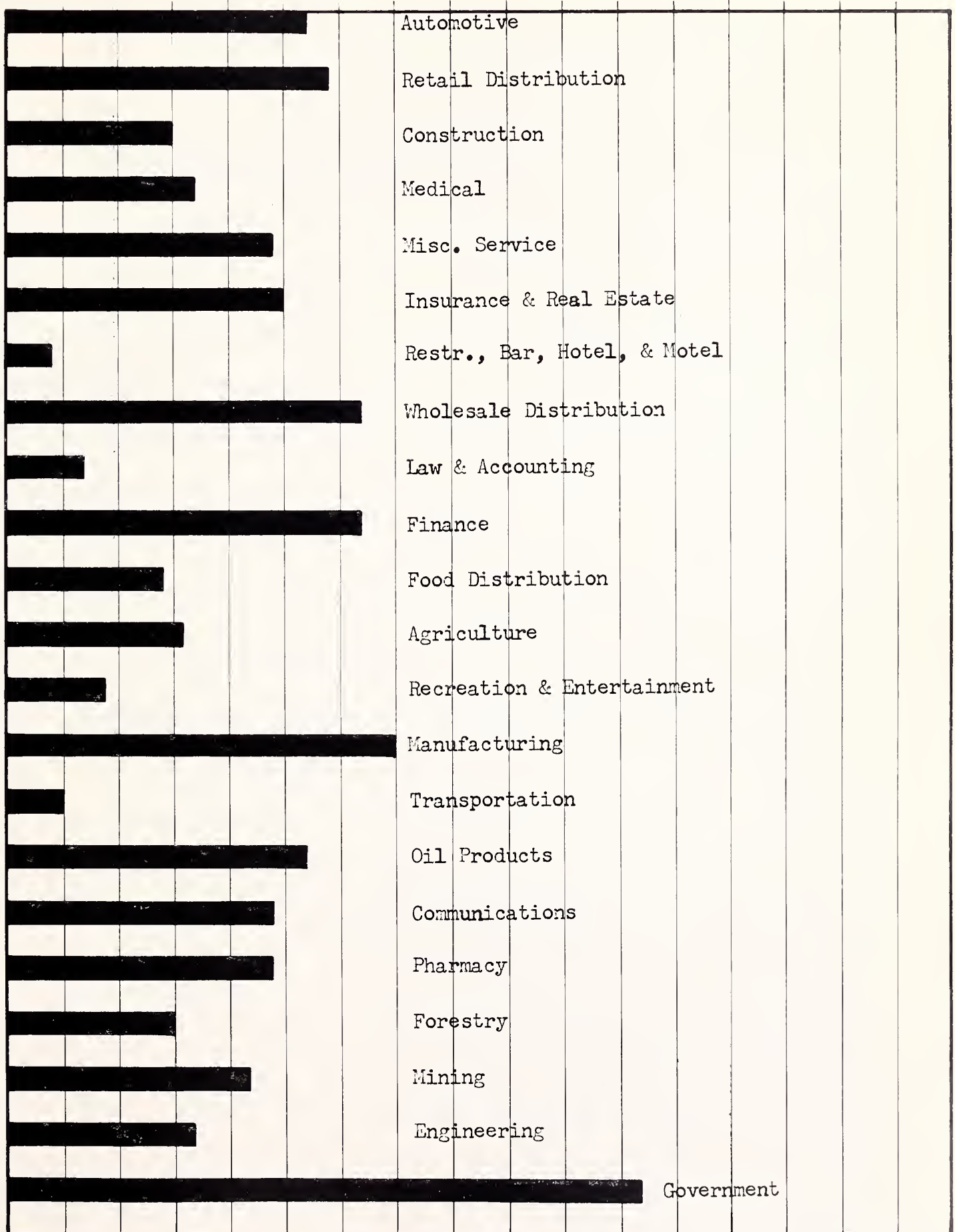
Government agencies--federal, state, and local--reporting, though fewest in number, had the greatest percentage (57%) of offices expecting to create new job categories. Thirty-five per cent of the manufacturing firms expected to add new job classifications. Those businesses or industries expecting the fewest new type job additions were in the categories of restaurants, bars, hotels and motels with 4 per cent; transportation with 5 per cent; law and accounting with 7 per cent; and recreation and entertainment with 9 per cent.

Selling was far out in front in the types of new jobs expected to be added with 183 such additions indicated by reporting firms. Other categories of new jobs fell chiefly in the office personnel and technical work classifications. The tabulations of new jobs anticipated were as follows:

FIGURE 3  
FIRMS ANTICIPATING ADDITION OF NEW JOB CLASSIFICATIONS

Percentages

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

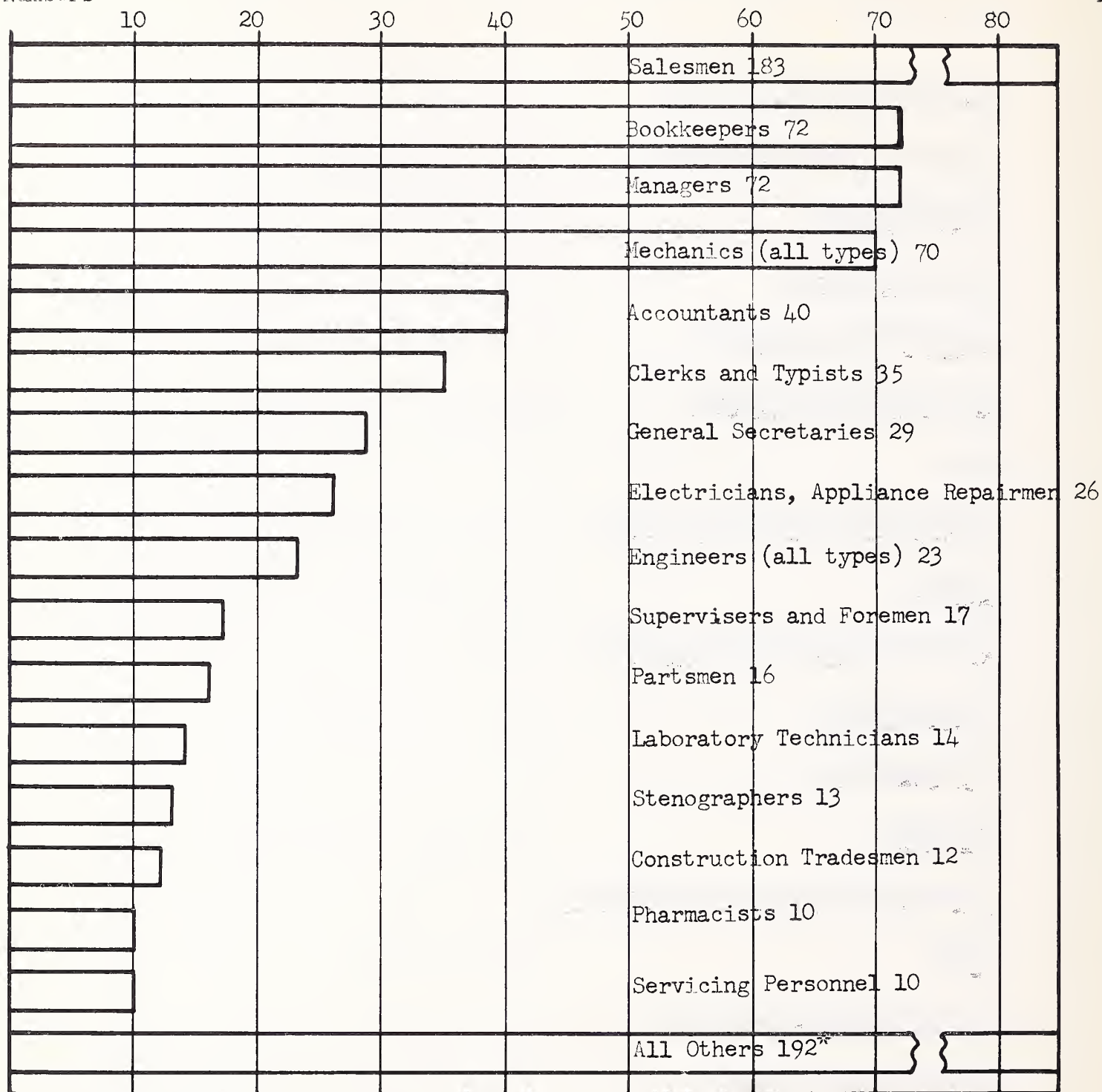




## CLASSIFICATIONS OF ANTICIPATED NEW EMPLOYEE NEEDS

Numbers

30



Note: Numbers of anticipated employees needed listed in figures.

\*Other classifications: Agricultural workers 9, dental hygienists 9, machine operators 9, auditors 7, machinists 7, receptionists 7, electronics technicians 6, cooks 6, lawyers 6, nurses 6, underwriters 6, business administrators 5, draftsmen 5, estimators 5, heavy equipment operators 5, butchers 4, dental assistants 4, investigators 4, plumbers 4, public relations personnel 4, purchasers 4, welders 4, x-ray technologists 4, adjusters 3, appraisers 3, beauty technologists 3, cashiers 3, chemists 3, chiropractors 3, finance analysts 3, home demonstration agents 3, legal secretaries 3, warehousing personnel 3, advertising personnel 2, announcers 2, bacteriologists 2, barbers 2, brokers 2, body repair and painting men 2, carpet layers 2, collectors 2, geologists 2, loan officers 2, shoemen 2, tax specialists 2, tellers 2, veterinarians 2, geophysicists 1, interior decorators 1, oral surgeons 1, psychologists 1.

## FULL-TIME EMPLOYEE CLASSIFICATIONS

The analysis of the full-time employees by classifications of training or experience showed most reporting employers group nearly half their labor force in the semi-skilled class, followed by technicians, professional and managerial in that order.

A tabulation of responses (Table III, Appendix) listed 54 per cent of employees as semi-skilled. The next largest class, technicians, figured to account for 26 per cent of the labor force, while professional help totaled 14 per cent and managerial help total 6 per cent. Assuming the 35 per cent of total employees reported as part-time help are also primarily semi-skilled, the total labor force runs preponderantly in that classification.

Professional employees were defined in the questionnaire as those having four or more years of formal training beyond high school or its equivalent. Technical employees were defined as those having one or two years of formal training beyond high school or the equivalent. And the semi-skilled employees were defined as those having no special training before employment.

As expected, the highly specialized categories of businesses or industries ran heavily to professional employees. Medicine led the list with 73 per cent, followed by law and accounting with 64 per cent, engineering with 60 per cent, and pharmacy with 46 per cent. Forestry and restaurants, bars, hotels and

motels were low in professional workers with 4 per cent each.

In the technical employee classification, communications businesses led with the highest percentage, 58 per cent, followed by the automotive businesses with 46 per cent, miscellaneous service businesses with 35 per cent, insurance and real estate with 34 per cent, and law and accounting and construction with 32 and 31 per cents respectively. Forestry with 8 per cent and mining with 10 per cent were low in technical employees.

Managerial employee percentages of full-time employees showed up with the greatest proportion in oil products industries with 16 per cent, followed by agriculture with 13 per cent, food distribution with 11 per cent and construction with 10 per cent.

Strong emphasis on the employment of semi-skilled workers was placed by forestry and mining industries with 84 and 81 per cent of their full-time employees respectively falling in that classification. Other business categories employing high percentages of semi-skilled workers were restaurants, bars, motels and hotels with 73 per cent, and manufacturing with 72 per cent.

It was noteworthy that law and accounting firms reported no semi-skilled workers, and medicine reported only one per cent.

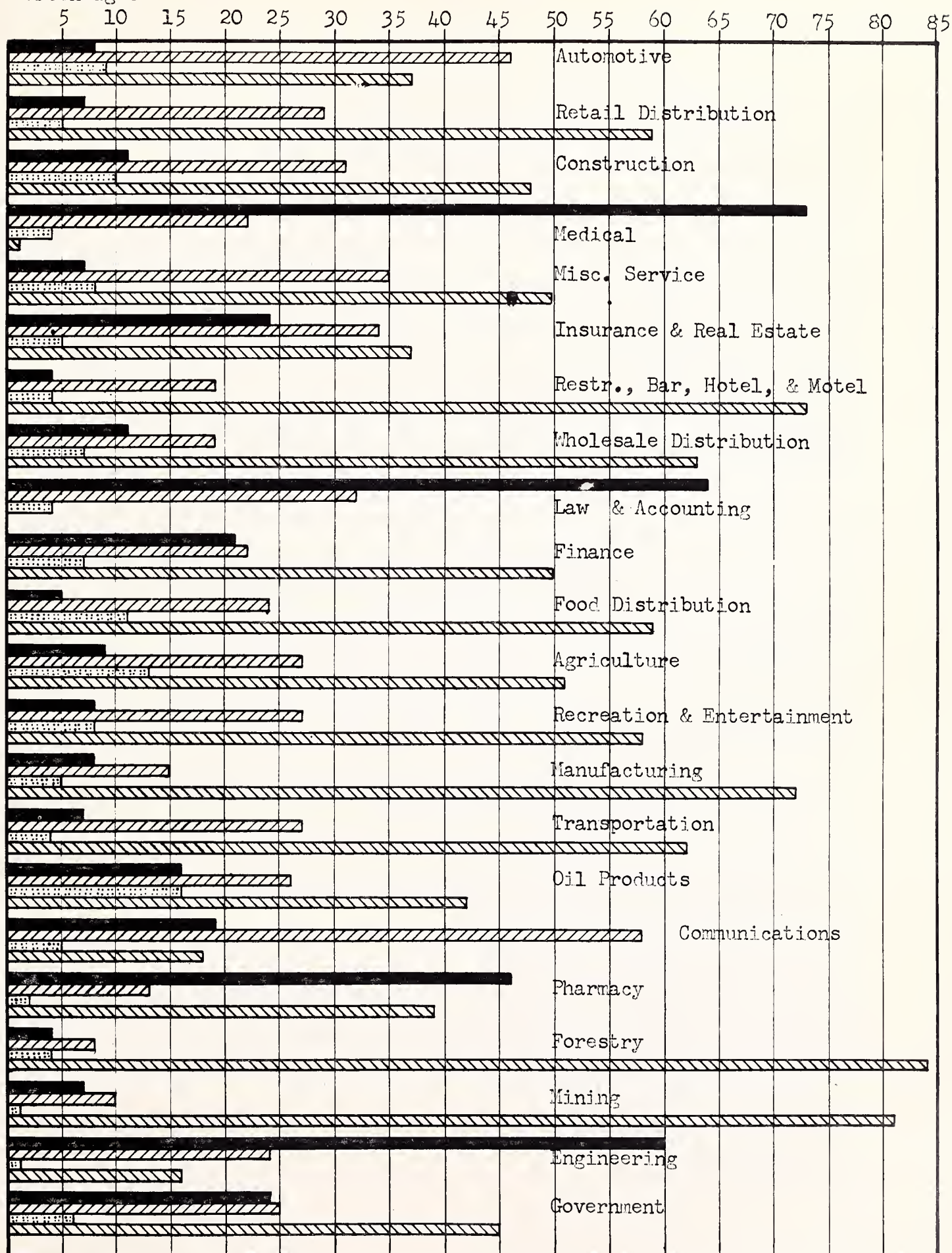


FIGURE 5

## CLASSIFICATIONS OF PRESENT EMPLOYEES

33

Percentages



Professional Employees    Technical Employees    Managerial Employees  
 Semi-Skilled Employees

Grouping the employee classifications in the 15 service business categories apart from the 7 productive industry categories, the service firms revealed greater percentages of employees in the professional and technical ranks than the producing firms. But the productive industries had a greater percentage of workers in the semi-skilled ranks than the service businesses. Both types of enterprise categories had the same percentage of workers in the managerial classification.

#### FULL-TIME EMPLOYEE CLASSIFICATIONS

	<u>Professional</u>		<u>Technical</u>		<u>Managerial</u>		<u>Semi-Skilled</u>	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Service Businesses	2583	16%	4972	31%	1026	6%	7658	47%
Productive Industries	1025	10	1822	18	546	6	6490	66

#### TRAINING PLANS FOR SEMI-SKILLED EMPLOYEES

All of the categories of businesses and industries reported they depended heavily on on-the-job training to prepare their employees for useful service. However, medical offices with their very small number of semi-skilled workers reported 30 per cent of the training was required after hours. Automotive employers also reported 15 per cent and engineering employers reported 11 per cent of their training of semi-skilled workers was after hours.



Sixty-nine per cent of all semi-skilled worker training was reported on the job, compared with 5 per cent training after hours and 5 per cent by other ways. About 20 per cent of the employers didn't report any training programs for their semi-skilled employees.

Other ways of training that were indicated were: Company training courses (18), schools (15), company schools (12), home study (10), company meetings (7), special courses (5), apprentice program (5), night school (4), seminars (4), correspondence (2), slides and films (1).

#### EDUCATIONAL LEVEL EVALUATION

The majority of employers responding (Table IV, Appendix ) expressed themselves as satisfied with the educational level of their present technician or semi-professional employees. But the margin of satisfaction was not great. Forty-nine per cent said they were satisfied, but 31 per cent said they were not. Thirteen per cent were uncertain, and 7 per cent didn't respond to this query.

The only businesses or industries that the majority indicated they were not satisfied with the educational levels of technicians were the automotive and construction firms. Others, such as manufacturing and communications firms were almost evenly divided in their opinions.

Only in the medical, law and accounting, and insurance and real estate firms was there a preponderant proportion of satisfactory responses on educational levels of technicians.

While not too many employers were ready to commit themselves to the types of training they would like to recommend for future employees, technical and a combination of technical and general education drew the greatest number of responses. Fourteen per cent of the employers submitting answered questionnaires favored more technical training and a like percentage favored a combination of technical and general. Only eight per cent favored general education alone. Another eight per cent had other types of training to recommend.

Medical, finance, and communication firms indicated a higher preference for general education.

Automotive, construction, restaurants, bars, hotels, and motels, recreation and entertainment, forestry, and engineering indicated a higher preference for more technical education for future employees.

Retail distribution, wholesale distribution, law and accounting, food distribution, agriculture, manufacturing, transportation, oil products, communication, pharmacy, mining

FIGURE 6

REACTION TO EDUCATIONAL LEVELS OF PRESENT EMPLOYEES

37

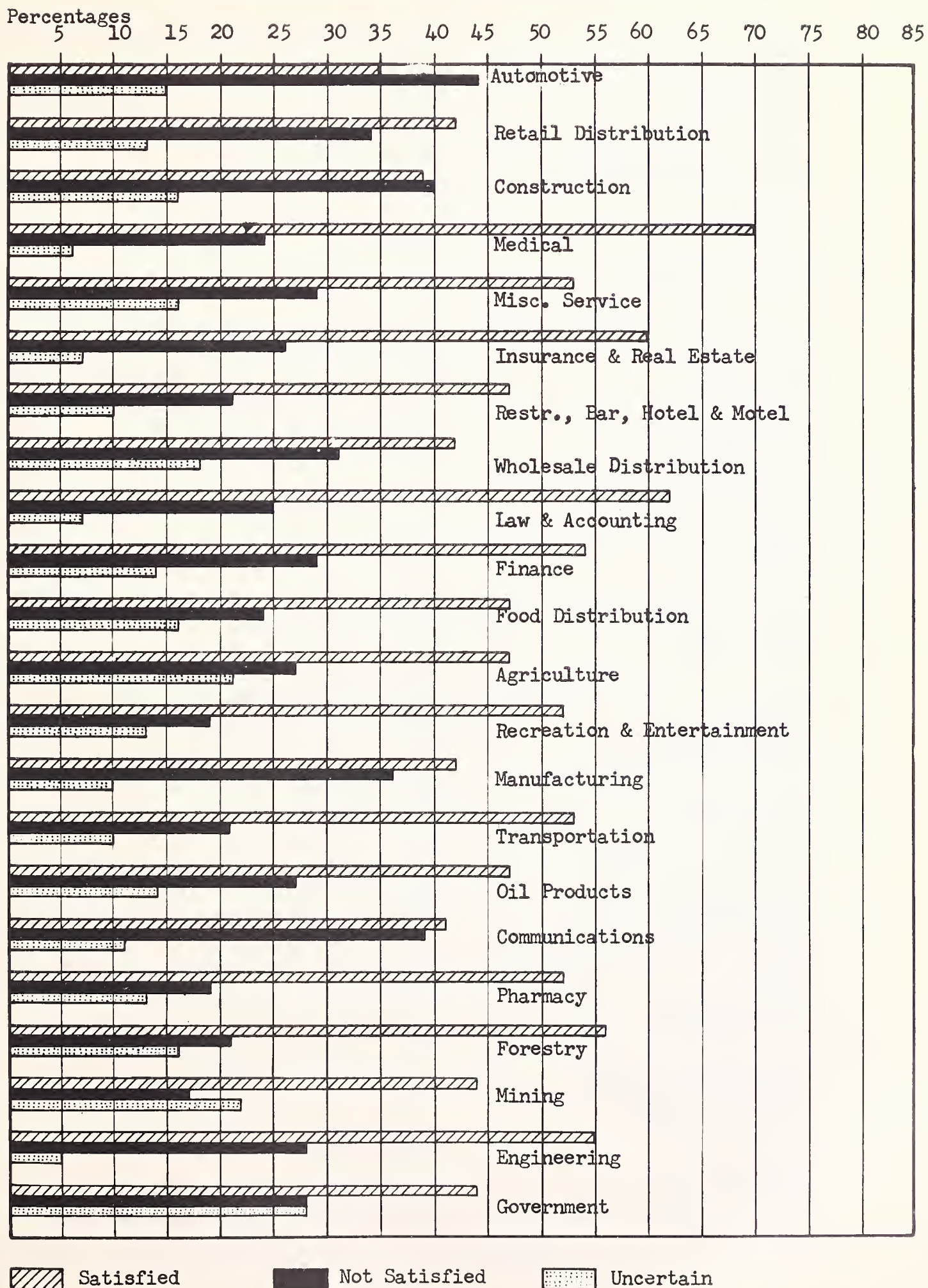


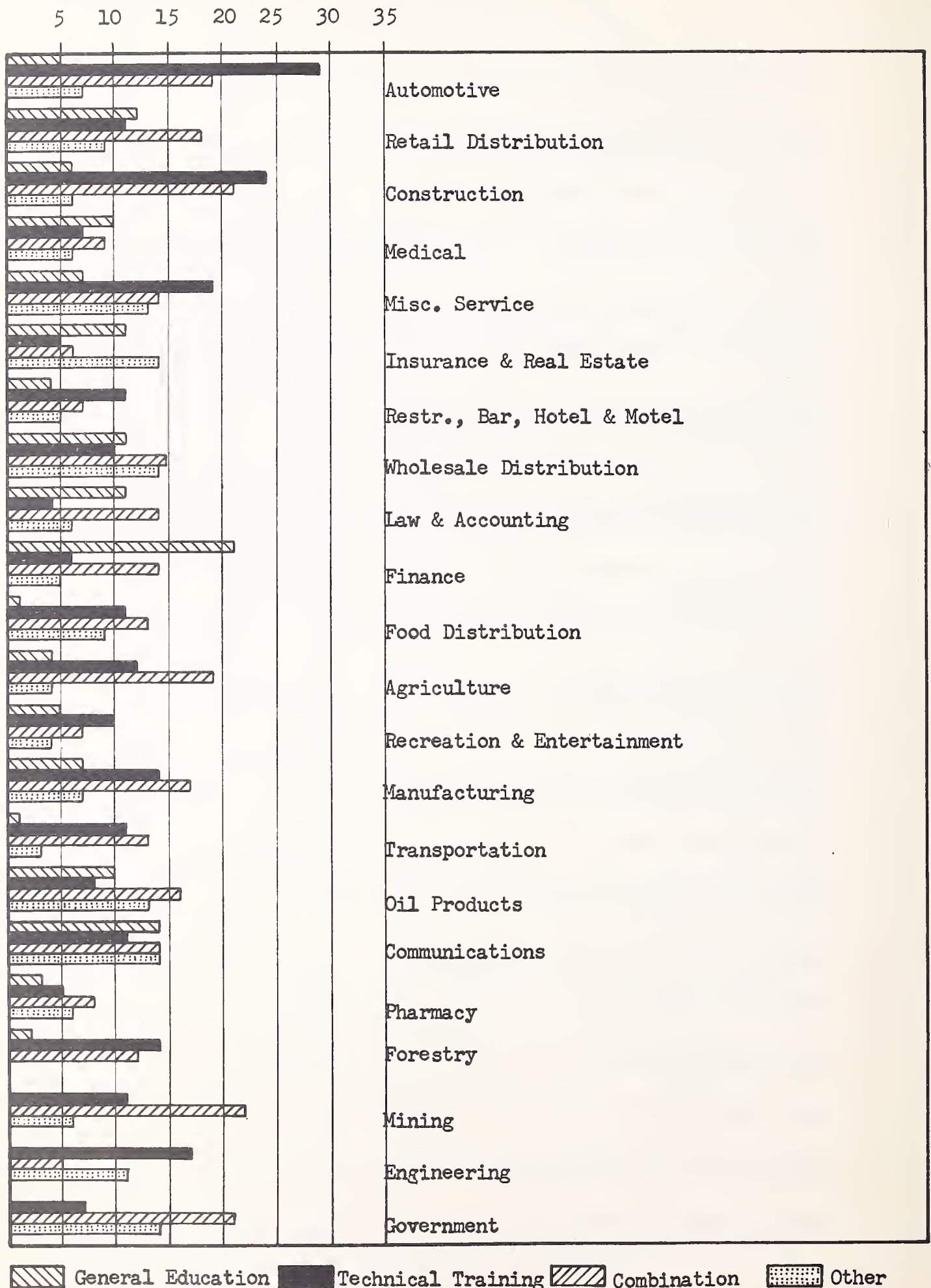


FIGURE 7

## AREAS OF RECOMMENDED ADDITIONAL TRAINING

38

Percentages



and government indicated a higher preference for a combination of the first two for future employees.

Insurance and real estate, communication, and pharmacy indicated a higher preference for other types of training.

In specific recommendations on the types of training needed by technicians, salesmanship led the list with 37 responses. But fundamentals of English and grammar drew 26 recommendations. Other training drawing a substantial number of responses were public relations, business administration, spelling, management development and mathematics. More than fifty other areas of training received one or more recommendations.

#### TRAINING INADEQUACIES

Broadening the training shortcomings analysis to the total employee force (Table V, Appendix) 35 per cent of responding firms indicated certain inadequacies. These followed a pattern similar to those for the technician group.

Spelling inabilities headed the list. English and grammar, public relations, lack of interest in learning, mathematics and arithmetic, salesmanship, initiative and basic education followed in that order in listed training or attitude shortcomings.

Forty-five per cent of the communications firms reported training inadequacies to head the list. They were followed by



finance firms with 43 per cent, automotive and manufacturing with 42 per cent each, retail distribution and insurance and real estate with 41 per cent each, construction and engineering with 39 per cent each, and miscellaneous services and pharmacy with 38 per cent each.

Those categories of firms reporting the least dissatisfaction with the training and performance of employees were: Food distribution, 18 per cent; recreation and entertainment, 20 per cent; medical and restaurants, bars, hotels and motels, 22 per cent each.

A detailed tabulation of the shortcomings reported involved much similarity, but it included a broad, almost complete spectrum of dissatisfaction.

#### TABULATIONS OF SHORTCOMINGS IN EMPLOYEES REPORTED

Spelling	67	Ambition	25
English and grammar	48	Interest in salary primary	21
Public relations	47	Lackadaisical attitude	21
Interest in improvements	44	General education	20
Mathematics and arithmetic	42	Pride in workmanship	18
Salesmanship	41	Attraction of big cities	18
Initiative	40	Educational background	18
Basic education	40	Technical knowledge	17
Responsibility	34	Willingness or desire	13
Experience	33	Typing	11
Returns on Training Costs	33	Accuracy	10
Advanced Training	33	Business ethics, practices	10
Interest	27	Communication art	10
Letter and report writing	26	Ability to follow	
Penmanship	26	instructions	10
Ability to think	25	Shorthand	10

Cultural background	9	Business knowledge	4
Confidence	8	Courtesy	4
Variety of skills	7	Neatness	4
Mechanical ability	7	Vocabulary	4
Bookkeeping	7	Other:	
Ability to handle money	6	Cleanliness, determination,	
Honesty	6	enthusiasm, loyalty, concentra-	
Management development	6	tion, logic, merchandising,	
Ability to plan	5	punctuation, professional atti-	
Equipment, supply	5	tude, apprentice background,	
responsibility		general office procedure, inter-	
Personality	5	personal relations, interest in	
Reading accuracy	5	new developments, trade school	
		training, business training.	

#### RESTRICTIONS ON HIRING BETTER TRAINED PERSONNEL

Slightly more than a majority of reporting employers (Table V, Appendix) who provided responses indicated the size or nature of their operation restricted them from hiring better trained personnel. Forty-seven per cent reported they felt restricted, and 45 per cent said they were not restricted.

Particularly in the retail distribution and food distribution categories, where 64 per cent reported restrictive factors, was there a strong feeling indicated that they are limited in their ability to acquire better-trained workers. Sixty-one per cent of restaurant, bar, hotel and motel operators checked the same restrictions, as did 60 per cent of agricultural operators and 59 per cent of automotive business employers.

On the other hand, some of the professional categories reported the least restrictions due to the size or nature of their

operations. Sixty-seven per cent of the medical firm employers, 66 per cent of law and accounting employers, and 61 per cent of the engineering employers registered no restrictions.

In reporting the specific reasons for not hiring better trained employees, the majority of eight categories of business and industrial firm employers indicated that better trained employees were not available (Table V, Appendix). These categories were: Automotive, construction, medical, miscellaneous service, law and accounting, finance, transportation, and engineering.

The majority of employers in the other fourteen categories indicated that they were not able to afford the market salaries of better trained employees and survive economically. The highly competitive nature of the enterprises or the relative smallness of the operating firms evidently is reflected in this restrictive factor.

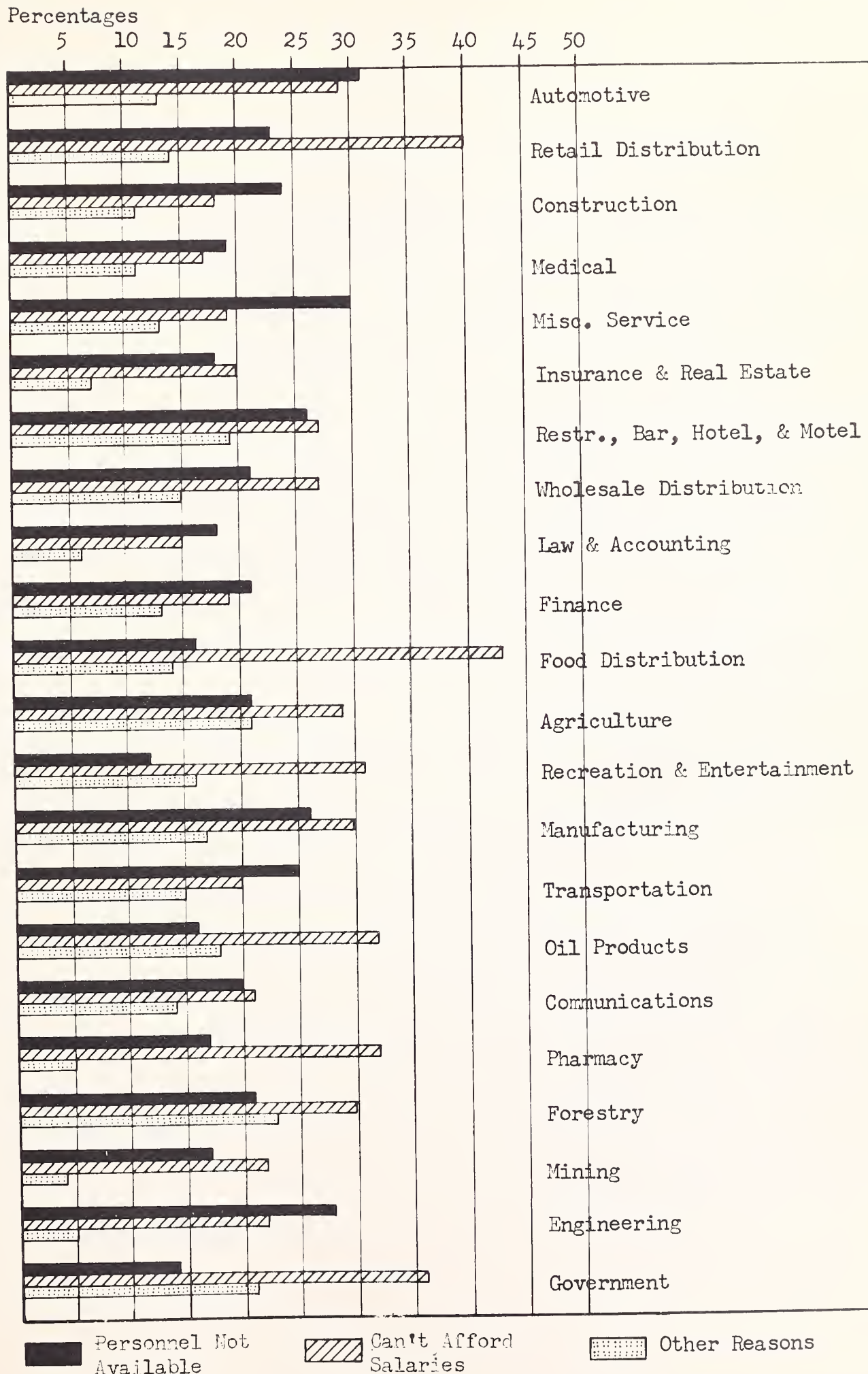
Twenty-six per cent of all reporting employers on this inquiry checked financial inability as the chief restriction. Twenty-three per cent reported trained personnel to fill their requirements were not available. And 13 per cent reported there were other reasons than these two why they did not add or substitute better trained workers.

Among the other reasons for not hiring better trained employees, some of which are similar to the chief restrictions

FIGURE 8

## REASONS FOR NOT EMPLOYING BETTER TRAINED PERSONNEL

43





listed, were:

There is no need for better trained employees.	38
Business or volume too small with few expansion possibilities.	29
On the job training is sufficient.	18
Shortage of employees with specific skills.	15
Expect too high salary to start with (must help build up profits).	13
Seasonal work.	12
Large corporations offer many benefits to employees.	12
Advancement is limited.	11
Must be flexible and do a variety of jobs.	7
Need responsible employees that are willing to learn.	7
Too much union interference in setting pay scale and hiring.	6
New businesses (don't know our requirements yet).	6
Choice of part time employees is limited.	4
Need financing (difficult for small business to borrow money).	4
Living conditions are undesirable.	3
Economic conditions prevailing.	2
Move to larger cities.	2
Federally controlled (no choice).	1
Uncertainty of company policy.	1
Prices less than 5-10 years ago (lumber).	1
Business not glamorous enough.	1
Cost of wages has risen.	1
Take home pay after taxes and inflation is insufficient.	1

#### STATUS OF PRESENT TRAINED LABOR SUPPLY

An analysis of employers' views on the status of available pools of trained labor ran from adequate to short with only five per cent of the responding firms terming the supply abundant (Table VI, Appendix). Forty-nine per cent classed the supply adequate, and 40 per cent classed it as short. Six per cent ventured no response.



Engineering firms returned the highest percentage in the abundant category with 11 per cent. Medical and food distribution firms reported in with 9 per cent in the abundant group. On the negative side, mining and government firms submitted no reports of abundance, but they were among the business or industrial categories with the fewest responses.

Automotive firms led the list in reporting short supplies of trained labor with 57 per cent feeling they had insufficient reserves to fill their needs. Fifty per cent of the communications and engineering firms indicated they felt the same pinch. And 49 per cent of the miscellaneous service and pharmacy firms reported short supplies.

The other 17 categories of employers reported percentage margins in the adequate class, but the difference between adequate and short was narrow in many instances. Mining led the list with 70 per cent voting the trained labor supply adequate. Wholesale distributors with 62 per cent, finance firm employers with 61 per cent, and forestry firm employers with 60 per cent also reported clear margins of adequate trained labor supplies.

Analyzing the trained labor supply by service businesses and productive industries, there were no marked differences between the responses of those in the 15 service firm categories and those in the 7 productive firm categories. Actually, they were almost alike.

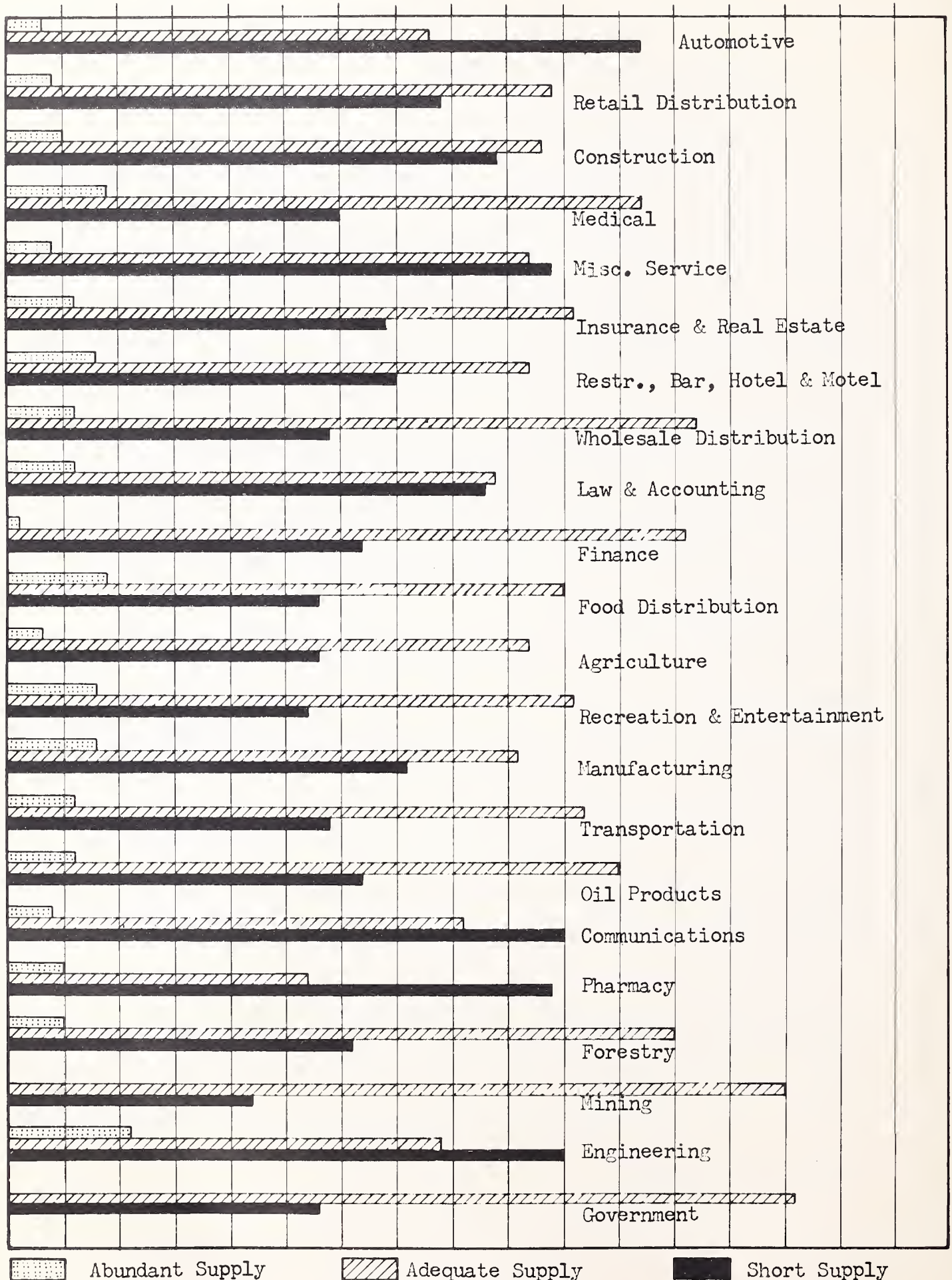
FIGURE 9

## AVAILABILITY OF TRAINED LABOR SUPPLY

46

Percentages

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85



Abundant Supply



Adequate Supply



Short Supply

## SUPPLY OF TRAINED LABOR

	Total No.	<u>Abundant</u> No.    Pct.	<u>Adequate</u> No.    Pct.	<u>Short</u> No.    Pct.
Service Businesses	2179	119    5%	1051   48%	874   40%
Productive Industries	588	30    5	296   50	223   38

Note: Approximately seven per cent of the firms did not respond to this query in each grouping of categories.

Contradictions appeared when employers were asked to list classes of trained employees in short supply, 45 per cent of the firms responding to this compared to the 40 per cent who had checked short supplies earlier. Communications and automotive firms, who had ranked at the top of those reporting labor in short supply however, again topped the list in specific listings of types of workers needed.

Selling personnel and all types mechanics far exceeded all other types of workers reported in short supply. In the great majority of cases, technicians requiring one to two years of training were the types of workers reported unavailable.

## FIRMS REPORTING VOCATIONS WITH WORKERS IN SHORT SUPPLY

Selling	278	Welding	9
Mechanics (all types)	207	Business Administration	8
Construction (trades)	81	Cabinet Making	8
Management	55	Linotype Operating	8
Appliance Repair & Electricians	46	Merchandising	7
Food Preparation	51	Copy Writing	6
Clerking & Typing	39	Loan Management	
General Secretaryship	39	(Banking)	6
Bookkeeping	37	Medical Technology	6
Stenography	37	Mill Working	6
Legal Secretaryship	29	Printing	6
Nursing	29	X-Ray Technology	6
Pharmacy	28	Abstracting	6
Accounting	26	Advertising	5
Supervisory & Foremanship	25	Glazing	5
Machinists	22	Underwriting	5
Meat Cutting	20	Announcing	4
Dry Cleaning	20	Tellers	4
Engineering (all types)	20	Upholstering	4
Body Repair & Painting	19	Watchmaking	4
Heavy Equipment Operation	18	Adjusting	3
Medical Secretaryship	18	Barbering	3
Food Service	17	Law	3
Technology (all types)	15	Optometry	3
Beauty Culture	14	Paper Hanging	3
Dental Hygiene	14	Public Relations	3
Plumbing	14	Surveying	3
Partsmen	13	Tailoring	3
Carpet Laying	11	Agriculture	2
Dental Technology	9	Architecture	2
Drafting (all types)	9	Makeup (Printing)	2
		Shoe Repairing	2
		Veterinary Science	2

## SOURCES OF TECHNICIAN SUPPLY

Under present practices, upgrading employees through in-shop training has been depended upon for the bulk of technicians needed (Table VI, Appendix). In-shop training and development



of technicians has obviously been regarded by employers as equivalent to the two-year formal training beyond high school. That method of filling employee requirements was checked by 23 per cent of cooperating employers. Only 15 per cent reported going to outside sources for their technicians. Such outside sources would include competitive firms and schools training in technology.

Oil products, government and manufacturing firms led the list of employers doing their own technician training with 70 per cent, 51 per cent, and 46 per cent, respectively. By contrast engineering, medical, and restaurants, bars, hotels and motels were the only categories of firms filling a greater percentage of their technician requirements from outside sources than through in-shop training.

#### EFFECTS OF AUTOMATION

Relatively few Montana employers reported experiencing any effect of automation on their businesses or industries (Table VI, Appendix). Only 21 per cent indicated any effect, even of the slightest nature. Fifty-one per cent of the finance firms, 47 per cent of communications firms, and 40 per cent of manufacturing houses reflected some effects to top the list.

Written in responses to effects of automation were of a general nature, such as little automation present, reduced employment, increased production, decreased unskilled employ-



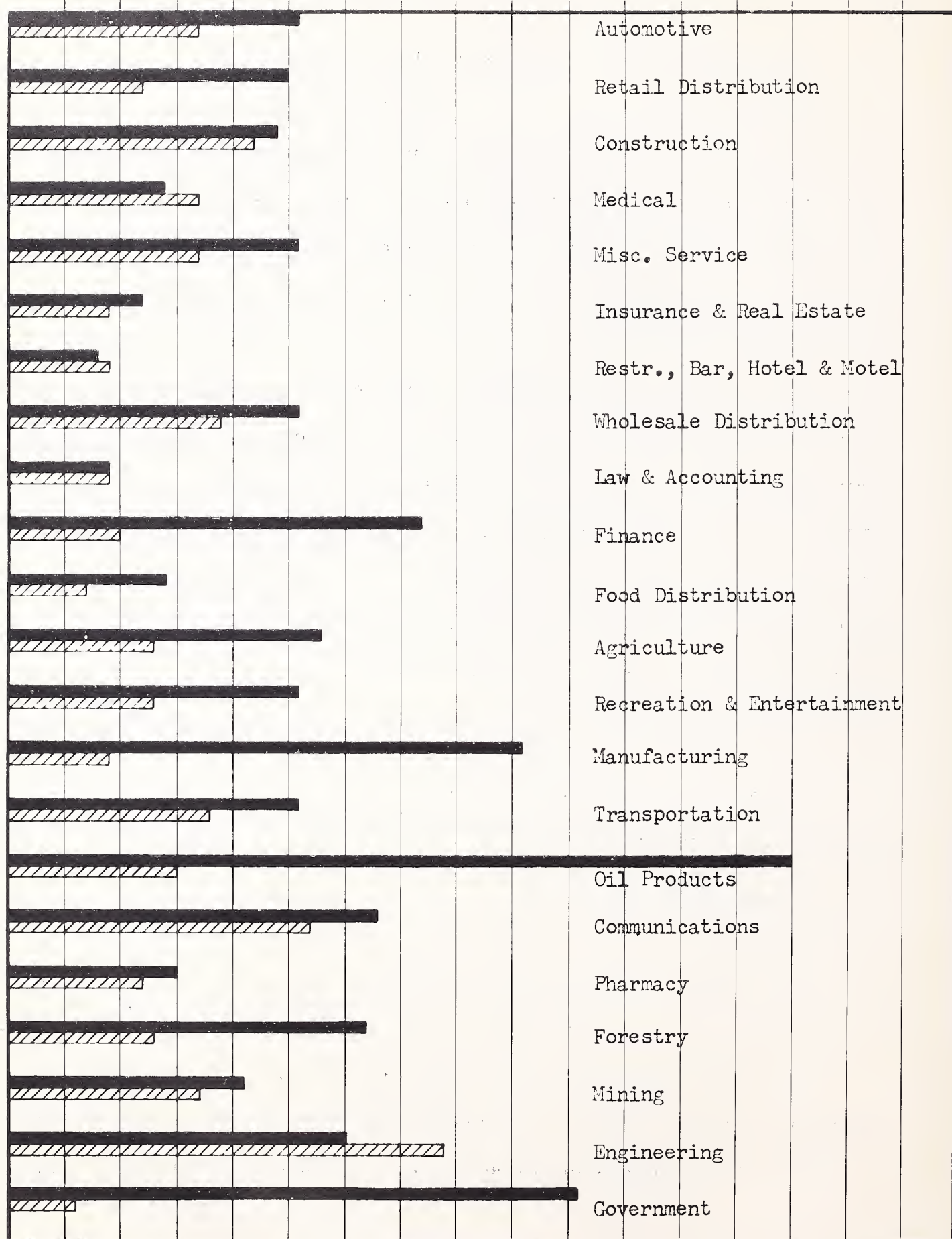
FIGURE 10

## IN-SHOP TRAINING OF TECHNICIANS COMPARED TO OUTSIDE SHOP SOURCES

50

Percentages

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85



In-Shop Training



Outside Present Labor Force

ment, more technicians required and the like. Only 35 firms in all reported a "considerable effect from automation, indicating that Montana businesses and industries feel they are relatively untouched by any new technocracy."

#### CONTACT SOURCES FOR LABOR SUPPLY

Employers reported they depended on personal contact and voluntary applications to a high degree for their recruitment of employees. But at least seven different avenues of contacts were being used in some degree (Table VII, Appendix).

Sixty-three per cent reported use of the personal contact route, and 52 per cent said they depended on voluntary applications for at least part of their recruiting. The state employment bureaus were also used by 27 per cent of the firms as reliable agencies for securing workers. Eighteen per cent reported they used advertising appeals, and 15 per cent counted on up-grading employees for part of their labor needs.

Only 12 per cent depended on the unions to provide employees, and another 8 per cent contacted college placement bureaus. Six per cent went to other sources, such as private employment agencies, high schools, trade schools, recommendations of others and professional and trade associations.

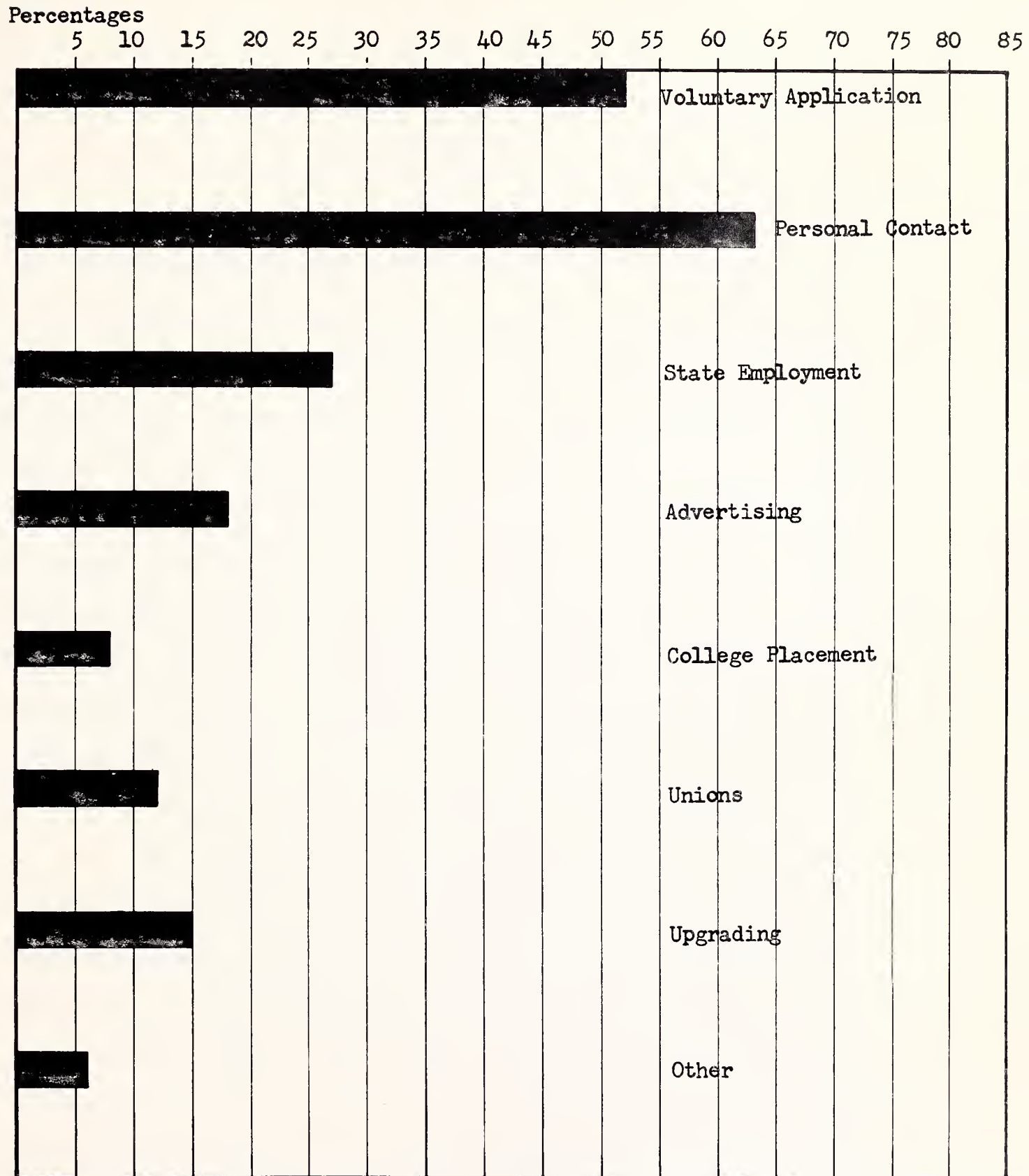
A great variation of approaches was evident by categories of firms, usually depending on the nature of the occupations. Unions were used heavily, of course, only by those categories of businesses and industries highly unionized. College placement bureaus were used more by some of the professional categories. Up-grading methods appeared more pronounced by firms with training programs, on the one hand, and by businesses with relatively small crews, on the other hand.

Almost uniform use, however, was made by all employers of the personal contact, voluntary application, and state employment avenues. The same was true, but in less degree, of advertising, though forestry, engineering, construction and oil products categories of firms seemed to shy away from this method.

FIGURE 11

## COMPARATIVE SOURCES OF LABOR SUPPLY

53



## SUMMARY

Much that seems to form a pattern in this study generally appears to confirm previous impressions and trends as indicated in national reports reviewed earlier. But the analysis of responses to the questionnaire brings into sharper focus Montana employer attitudes toward labor's educational conditions and anticipated needs.

Recognizing the risk of generalizing and cutting across some conflicting reports and patterns, the analysis seems to reveal seven general conclusions resulting from this study.

1. Service businesses anticipate the greatest increase in labor force despite the fact their futures appear tied to expansion in the productive industries, which visualize a much more conservative growth.

Montana employers are principally in the service categories of business, and the responses reflected this situation. Seventy-eight per cent of the respondents fell in the service business grouping and 22 per cent fell in the productive industry grouping. Likewise, the service group employed 61 per cent of the workers, according to the tabulated results.



Over the next ten years, the service business grouping anticipates a 24 per cent increase in employee needs, compared with an 11 per cent predicted in the productive industry grouping employees.

Selling led all specific types of new job opportunities anticipated in the near future. It and other service-type jobs such as bookkeeping, managing, mechanics, accounting, clerking, typing, and similar general office or store-type jobs dominated the top bracket of anticipated work opportunities.

The first type of job classification--engineering--that likely would fall in the production or development class did not show up in the list until ninth in the numerical order of estimated future job opportunities. The service-type jobs dominated the list.

2. Reflecting national projections, Montana employers recognize that major shifts in present worker classifications seem imminent. Specifically, the trends will be heavily toward technical and professional classifications and away from semi-skilled ranks.

Firms presently reporting heavy use of technicians were among those with the highest percentages anticipating creation of additional job categories. These included automotive,

miscellaneous service, insurance and real estate, communications, oil products, and government enterprises.

Manufacturing firms with a relatively low percentage of technicians and a high percentage of semi-skilled laborers were second high in percentages of those categories anticipating new jobs. But manufacturing firms were among those with the highest percentage of dissatisfaction with present educational levels of employees, suggesting a shift away from semi-skilled labor uses when possible.

Forestry and mining, at the top of the list as users of semi-skilled labor with 84 and 81 per cent respectively, were well under average in anticipating additional employee requirements for the next decade. Restaurants, bars, hotels and motels, third high in semi-skilled labor use, were at or near the bottom in labor growth estimates. The same was true of food distribution and recreation and entertainment firms. These latter categories of firms did not record extensive dissatisfaction with educational levels of their workmen. Other categories, exhibited similar, though less pronounced evidence of this tie among high use of semi-skilled labor, general satisfaction with educational levels, but low growth estimates.

Only manufacturing firms, reported above, had more optimistic predictions of labor force growth among the present heavy users of semi-skilled workers.

3. There appears a direct relationship between heavy users of technicians and dissatisfaction with present educational levels of employees. And, by contrast, there appears a direct relationship between heavy users of those trained in the professions and satisfaction with their educational levels. Thus, the training inadequacies appear to lie primarily in the technical areas.

Automotive firms, who reported 46 per cent of their employees in the technical classifications, and construction firms, who reported 31 per cent of their employees in that same class, were No. 1 and No. 2 in dissatisfaction with the educational levels of employees. They also ranked No. 1 and No. 2 in percentage recommending additional technical training for their labor force. Communications firms--heaviest employers of technicians with 58 per cent--were about evenly divided in percentage of satisfied and dissatisfied employers. They, however, favored in equal proportion either a combination of technical and general education or general education alone. Technical education alone was slightly lower in their recommended training correction. As mentioned earlier, manufacturing firms with a force of technicians considerably smaller than

their semi-skilled workers were high in dissatisfaction with educational levels with 36 per cent, slightly under the 42 per cent registering satisfaction, but they also were heavily in favor of either a combination of general education and technical training or technical training alone.

By contrast, the medical firms with the highest percentage of professional workers registered the highest percentage of satisfaction (70%) with the educational levels. Law and accounting firms, second high in professional worker percentage, were also second high in satisfaction (62%). Engineering, pharmacy, and insurance and real estate firms followed the same pattern--high percentage of professional, high percentage of satisfaction. Their recommended training emphasis varied with the nature of their work, but it was generally spread over all areas of training.

As a whole, 49 per cent of the employers expressed themselves as satisfied with the educational levels of their employees, but 31 per cent disagreed and another 13 per cent were uncertain.

4. It seems apparent that heaviest shortages of labor are predominantly in the categories of firms using a high percentage of technicians and to some extent professionals.

Again, automotive firms, second heaviest users of technicians, records the greatest shortage of trained labor percentagewise. And communications firms, first in users of technicians, are second in reported percentages of trained labor shortages.

Pharmacy firms, fourth in users of professional employees, are tied for third in percentages reporting trained labor shortages. Miscellaneous service firms, however, extensive users of semi-skilled workers but third in the use of technicians, match pharmacy firms in percentages of labor shortages.

5. In-shop training programs appear inadequate to meet technician training requirements.

Categories of employers indicating the greatest percentage of technicians in their labor force were not among the greatest users of the in-shop method of training them. On the contrary, those same employers were high among those recommending technical pre-training for their future employees.

The six categories of firms reporting the greatest percentage of technicians were communications, automotive, miscellaneous service, insurance and real estate, law and accounting, and construction in that order. None of these appeared among the top categories reporting in-shop training as their means of developing technicians.



But of the six leading categories using technicians, automotive, construction, and miscellaneous service business operators rated one, two and three in the list of those recommending technical training as the area in which their future employees should be trained. In making this recommendation, they had listed themselves as dissatisfied with the training of their present employees.

While the heavy users of semi-skilled labor showed a high percentage of on-the-job training, the heavy users of technicians indicated dissatisfaction with training levels, reflected only median to light use of in-shop training, and rated at the top in recommending pre-employment training in the technical field.

Fourteen per cent of all the employers--equalling the highest percentage of any--responding to the survey question on recommended training advised technical training for their future employees to prepare them for satisfactory employment. Another 14 per cent favored a combination of general education and technical training to produce more flexible and well-rounded trainees.

6. Size of business in some instances and special nature of occupation in other instances have restricted employment of adequately trained personnel.

Forty-seven per cent of the reporting firms said they felt this pinch to 45 per cent who said they did not.

Retail distribution and food distribution firms, reporting the highest percentage (64%) of restrictions, were at the top of the list in percentages of employers acknowledging they could not afford the salaries of trained personnel with 40 and 43 per cent respectively. Agriculture, wholesale distribution, government, and oil products firms also were near the top in recognizing restrictions and agreeing they could not successfully compete financially in the labor market.

Most of these categories of business and industry also fell in the class of heavy users of semi-skilled labor.

Automotive firms, on the other hand, were near the top in admitting restrictions, but charged them to unavailability of trained personnel. They led in percentages listing that reason for not hiring better trained personnel. Manufacturing and miscellaneous service firms were also in this predicament, though in a lesser degree.

These latter firms appeared among the heavy users of technicians and semi-skilled workers and were heavy recommenders of more technical training.

7. Weaknesses in basic education fundamentals appear evident all across the range of occupations.

Plaguing weaknesses in basic fundamentals of training continue to crop up to harass employers. Such inadequacies in spelling, writing, speaking, grammar, mathematics, and penmanship were reported almost uniformly.

These fundamentals carried over into attitudes, initiative, interest, ambition, and pride in accomplishment. The combination of inadequate basic skills and personal habits and characteristics were scored heavily as deterring factors in successful job accomplishment.

Thirty-five per cent of the responding firms felt these employee inadequacies contributed to the firms' problems in meeting quantity and quality operational goals.

## CONCLUSIONS

Valid comparisons between what cooperators in this survey and what Montana businesses and industries as a whole may visualize as their chief employee supply and educational level problems may be challengeable. First a projection of what responding firms have indicated to the total state business and industrial firm numbers is difficult because some regroupings of categories different from Unemployment Compensation Commission categories have been made for the purpose of this study. Second, some responses in certain categories may be insufficient to properly measure the consensus of opinions.

Also, responses sometimes reflected emotional frustrations and reactions which may have been improperly translated to current employee status. This likely is natural, however, in any survey where the human element is a factor in the measurements.

Some responses were sketchily done, and some contradictions were evident in answers to queries compared to others of a related nature. This was evident both in areas of statistical reporting of present employees and of estimated projections of future employee requirements.

The comprehensive approach to the state's total employer list may have been too ambitious. But opinion inventories by personal contact were impractical in this limited study over a state the size of Montana. An auxiliary or supplemental study to secure greater responses for some categories was impossible for the same reason.

The sampling represents a preponderance of service-type firms which are characteristic of Montana's primarily agriculture-oriented economy with lesser valued tourism and its related recreational activities. The number of responses reflects the typically high incidence of such service businesses in the state. Likewise, the relatively light response in manufacturing and mining is considered typical and equitable.

Agriculture itself, although predominant, appeared well down the list in the number of responses due to the nature of the single-family agricultural operations and restricted classification of agriculture-related businesses that went into this category. Consequently, the number of responses in agriculture was not in proportion to its greater importance in the state's economy.

The construction category attracted a much higher percentage of responses than anticipated and than believed proportion-



ate. The same inflated response was experienced in the medical category, particularly in relation to the approximately half the number in the law and accounting category. These variants from expected proportions are unexplainable.

An analysis of the non-response group, though tempting, appears a dangerous undertaking. Biases were evident in some unusable responses which indicated bitterness in comments on competitors, labor irresponsibility, wage rates, growth of chains, and similar factors, but which declined to score the questionnaires to a usable extent. If any selective factor could be attached to this group, they would appear to comprise very small operations and operations that have not been able to maintain competitiveness for market, labor, and consequently services.

This study may be regarded as more of a horizontal than a vertical approach due to the broad base of contacts and the many facets of the problem studied.

Basically, the study points up the shifting nature of employment from a declining market for non-skilled and semi-skilled labor to demands for more technicians and professional personnel. This has its implications: (1) for educational institutions, which should pattern their programs of offerings

to meet the demands particularly in the technical occupations, (2) for counselors of young people to emphasize the new fields of opportunity in highly skilled vocational and technical areas now taking their places in importance alongside the professional areas, and (3) for businesses and industries, which must upgrade their labor corps in pre-trained personnel to remain competitive in product and service quality.

The present preponderance of service businesses in Montana will likely continue for the foreseeable future, but some adjustment in the nature of its supporting enterprises and quality of its service seems apparent. Agriculture, a shrinking vocational field, tends to support a high percentage of businesses in services work at present. But in view of the declining numbers predicted in the business of producing raw agricultural products, it seems something of a paradox that service businesses anticipate more than twice the percentage of additional employees that productive industries expect.

If other productive enterprises do not increase and flourish to more than take up the slack left by declining numbers in agricultural activities, there seems little opportunity for service businesses to thrive and expand. In view of the projected growth in the service business grouping--more than

double the projected growth in the productive enterprise grouping--it would seem either service business employers are overly optimistic or productive enterprise firms are unduly pessimistic.

Improved methods of farming and livestock growing, of course, should require better educational backgrounds for the agricultural operators. They will have to keep abreast of new farming techniques for survival. This will require more trained agricultural technicians. But farm consolidation, through acreage and/or production controls and mechanization primarily, cannot produce any solutions for employee opportunities.

It is true that national economists predict a substantial increase in service business employees, particularly in the professions and technical fields. However, industry will have to discover Montana in a considerably greater extent than in the past for the state to share in the national trends in even an average way. The tourism trade is helping take up the slack in a growing proportion, but it does not appear adequate in itself.

Regardless of the industrial development of Montana, all categories of employers obviously will be shifting their employee forces from present nearly half in semi-skilled class-

ifications to a greater percentage in professional, technical, and managerial classifications. The predicted national trend from blue-collar workers to white-collar workers will find its counterpart in this state, even if only present businesses move toward greater automation and employee efficiency. Professional and the technician requirements now measured to 20 per cent and 26 per cent respectively will move up as the semi-skilled employee demands move down.

Technicians are now figured at 1.3 to 1 ratio over professionals, by survey measurements. If this ratio is to match estimates of expert analysts like the U. S. Office of Education with its 3-5 to 1 ratio or the late Dr. Charles Prosser with his formula of 3 to 1 ratio, technicians will have to nearly triple their present ratio to professionals.

Less than 50 per cent satisfaction with present training levels of workers reflected in the survey results is indicative of the wide area for improvement in the nature, type, level, and quality of instruction.

Likewise, the measured heaviest shortages of labor predominately in the categories of firms using a high percentage of technicians and to some extent professionals point up the need for matching training of technicians and professionals in

some areas with the demonstrated shortages.

This can be nothing short of challenging to young people who seek satisfactory vocational careers and to educational institutions and society charged with preparing young people for useful and contributing lives.

National projections and state firms agree more technicians and fewer semi-skilled laborers are needed; there appears a close relationship between heavy employers of technicians and dissatisfaction with the present educational levels of employees; and heaviest shortages of labor were principally among firms using a high percentage of technicians.

All this apparently points to one answer--more technicians.

This means educational levels can go in only one direction--up. Technician trainees will have to be drawn from those presently moving into the semi-skilled classification since the demands for professionals are growing, too. This is where the training centers of Montana will come in. Not only will they have to provide training for additional professionals in facilities and programs now existing in a large measure, they will have to create many new programs and expand existing programs for technician training. The technology training field has been little more than explored in this state. Only one Montana unit of vocational-technical training exists, and that



is at Northern Montana College in Havre. It is currently enrolling only 218 students in that division of instruction.

The in-shop training of technicians by only 23 per cent of the survey respondents, many of whom expressed dissatisfaction with employee training levels, tells a story in itself. This type of apprentice training is historic, but it hardly meets the needs of a state on the fringe of a national industrial community not to mention the impatient demands of a space age. Apprentices acquire the training of their predecessors, an inherited and backward-looking type of educational succession.

If the latest techniques are to reach today's technicians, these skills must not seep in through an osmotic process against the characteristics resistance of elderly and established fellow workers. The techniques must be transmitted and transmuted by instructors who are charged with the full-time job of keeping abreast of latest developments and passing them along to their proteges. These instructors do not share their instruction time with product or service production responsibilities. Besides, business and industry can ill afford to spend its efforts in training activities to the extent it has in the past, not alone to the greater extent that could be necessary in the future.

This appears to put the pressure and responsibility squarely on training institutions and society that is charged with providing the educational opportunities for young people

to best serve national needs as well as themselves. Montana may not be any less remiss in facing up to this situation than its neighbors, but it cannot be guided primarily by regional trends. It must face the requirements of its own citizens, and preferably take the leadership in tailoring its educational programs to vocational needs and opportunities.

Then, to fully meet the situation at all levels, counseling services at the secondary school level as well as the higher educational levels should be oriented to business and industrial needs. Traditional professions continue to hold the greatest lure for the high school graduates, but experience often teaches the hard lesson that all do not have the ability or the personal characteristics to succeed in those fields. Besides, the opportunities for success and personal satisfaction may lie in technical fields so often unexplored by students and counselors and so often not included in training programs offered.

If Montana is to retain its emphasis on offering all youngsters training to the extent of their abilities--the inept along with the able, the unwilling along with the willing--it will have to alert both counseling staffs and educational institutions to the full scale of vocational needs and job opportunities.

Cooperation between worker placement agencies and employers

to match trained skills with opportunities compose the other half of the coordination picture. Once the training facilities are created and counseling programs are enlightened, it remains a lesser though important exercise to channel the trained personnel to the matching vocational openings.

This analysis of the survey results leaves many questions unanswered. But its chief implications should be abundantly clear for young trainees and their counselors, for training institutions and their program directors, and for business and industries and their personnel officers and planning departments.

## BIBLIOGRAPHY

## BIBLIOGRAPHY

- A Survey of Technical Occupations in Oregon. A Preliminary Report. Trade and Industrial Education Service. Salem, Oregon: State Division of Vocation Education, 1959.
- Brockmann, L. O. "Education Beyond the High School with Special Reference to the Vocational-Technical Areas." Manuscript, Havre, Montana, January 16, 1958.
- Brown, Newell. "The Manpower Outlook for the 1960's--Its Implications for Higher Education," Higher Education, XVI, No. 4 U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, December, 1959.
- Hoflich, Harold J. and Maxine Johnson. The Economy of Montana. Helena, Montana: Bureau of Business and Economic Research, Montana State University, and Unemployment Compensation Commission, 1951.
- Little, J. Kenneth. A State-Wide Inquiry into Decisions of Youth About Education Beyond High School. Madison, Wisconsin: School of Education, University of Wisconsin, 1958.
- Manpower Changes in the 1960's. Department of Labor. Washington: Government Printing Office, 1959.
- Manpower Requirements and Training Needs Survey of the Wheeling-Steubenville Metropolitan Area. An Occupational Study of Trained Work Force, September, 1958 to September, 1963. Wheeling, West Virginia: West Virginia Department of Employment Security.
- Odiorne, George S. "How Small Business Cuts Its Throat," Harper's Magazine, CCXX, No. 1319 (April, 1960) New York: Harper and Brothers.
- Population and Labor Force Projections for the United States, 1960 to 1975. Bulletin No. 1242, United States Department of Labor. Washington, D.C.: U.S. Government Printing Office.
- "The Latest on How States Are Growing," U.S. News & World Report, XLVIII, No. 9. (Washington: United States News Publishing Corporation).



Utah Entry Occupations Survey of High School Graduates, 1953, 1955, 1957. Salt Lake City, Utah: Utah Department of Employment Security, 1959.

"Western Employment Trends, 1947-48," Western Regional Report No. 6. U. S. Department of Labor, Bureau of Labor Statistics; San Francisco, August, 1959.

## APPENDIX

TABLE I

## TYPES OF BUSINESSES THAT ARE INCLUDED IN EACH OCCUPATIONAL GROUP

Occupational Groups	Types Of Businesses
1. Automotive	Auto Sales, Auto Supply, Auto Repair, Blacksmith, Body & Paint, Equipment Farm Supply, Garage, Implements, Machine Shop, Radiator & Glass, Service Stations, Storage, Tire, Tools, Truck & Tractor Sales, Welding.
2. Retail Distribution	Appliances, Books, Clothing, Furniture, General Merchandise, Hardware, Hobby, Lumber, Office Machines, Shoe, Sport, Television & Radio, Variety Stores.
3. Construction	Architecture, Bridge, Building Services, Construction, Masonry, Plastering, Ready-Mix Concrete, Sand & Gravel, Steel & Aluminum Fabrication.
4. Medical	Clinic, Chiropracting, Dental, Hospital, Medicine, Optometry, Veterinary.
5. Miscellaneous Services	Air Conditioning, Appliance Repair, Barber, Beauty, Cleaners, Decorating, Drapery, Electricity, Floor Covering, Florist, Heating, Landscaping, Locker Plants, Mortuary, Painting & Glass, Photography, Plumbing, Radio & TV Repair, Refrigeration, Sheet Metal, Shoe Repair, Upholstering, Water Conditioning, Woodworking.
6. Insurance & Real Estate	Abstract & Title, Appraisal, Auditing, Bonding, Equipment Rentals, Insurance Adjusting, Insurance Agencies, Investment, Land Development, Loan, Realty Agencies, Realty Management.
7. Restr., Bar. Hotel & Motel	Bars, Cafes, Drive-ins, Hotels, Ice Cream Parlors, Lounges, Motels, Restaurants.
8. Wholesale Distribution	Agricultural Supply, Auto Supply, Barber, Beer, Building Material, Dairy, Electrical, Food, Gas, Oil, Paper, Petroleum, Plumbing & Heating, Refrigeration, Surgical.
9. Law & Accounting	Accounting, Adjusting, Law, Tax Consulting.
10. Finance	Banks, Building & Loan, Credit Bureaus, Finance, Investments, Production Credit, Savings & Loan, Trusts.
11. Food Distribution	Grocery Stores, Chain Stores, Retail Distribution.

TYPES OF BUSINESSES THAT ARE INCLUDED IN EACH OCCUPATIONAL GROUP (continued)

Occupational Groups	Types of Businesses
12. Agriculture	Agriculture Association, Auction, Canal and Reservoir, Conservation, Co-ops, Creamery, Dairy, Elevator, Farming, Fertilizing, Hatchery, Meat Packing, Ranching, Spraying.
13. Recreation and Entertainment	Bowling, Drive-in Movie, Dude Ranch, Lodges, Orchestra, Plays, Resorts, Sightseeing, Sports, Theater.
14. Manufacturing	Aluminum, Boats, Bottling, Brewing, Brick and Tile, Brooms and Brushes, Cabinets and Furniture, Canning, Caskets, Clay, Chemicals, Concrete Products, Fishing Tackle, Fixtures, Foundry, Iron Works, Jewelry, Leather Goods, Lime, Metal Mouldings, Pipe, Plywood and Veneer, Refineries, Stramit, Typewriter Desks
15. Transportation	Agricultural Flying, Great Northern Railway, Rentals, Transfer and Storage, Trucking.
16. Oil Products	Butane, Gas, Geology, Natural Gas, Oil and Gas Well Servicing, Oil Production, Oil Exploration, Petroleum Products, Propane, Refining, Water Well Drilling.
17. Communications	Advertising, Cable T.V. Co's, Engraving, Newspaper, Outdoor Advertising, Publishing, Radio, Telephone, Television.
18. Pharmacy	Drug Stores, Pharmacists, Retail Distribution.
19. Forestry	Forestry, Hauling, Lumbering, Logging, Milling, Post and Pole, Pulpwood, Wholesale Lumber.
20. Mining	Assaying, Building Stone, Coal Mining, Copper Mining, Gold Mining, Lead Mining, Metallurgical, Silver Mining, Zinc Mining.
21. Engineering	Architecture, City Engineer, Construction Engineer, Consulting Engineer, Mining Engineer, Mud Engineer, State College, Surveying.
22. Government	Assessor, Bureau of Indian Affairs, City Planning, Clerk and Recorder, Education Association, Farm Bureau, Indian (Affairs) (Agency), (Crafts); Sheriff.



TABLE II

III. A. WHAT IS THE TOTAL NUMBER OF PERSONS YOU HAVE EMPLOYED DURING THE YEAR 1959 OR DURING YOUR LAST FISCAL YEAR?  
 B. WHAT ARE YOUR FUTURE NEEDS? ESTIMATE AS FAR AS POSSIBLE.

C. WHAT NEW JOBS DO YOU ANTICIPATE HAVING WHICH ARE NOT NOW ON YOUR PAYROLL CLASSIFICATION?

Businesses and Industries		Present Employment				Employment Estimates						Firms Anticipating New Jobs	
No.	Full Time	Part	Time	Total	2 years		5 years		10 years		No.	Pct.	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
Automotive	367	2909	81%	666	3575	560	16%	559	16%	663	18%	99	27%
Retail Dist.	295	3240	80	799	4039	629	16	1022	25	1836	45	85	29
Construction	278	2416	38	4012	6428	577	9	550	8	561	9	42	15
Medical	240	1056	74	368	1424	106	7	121	8	98	7	42	17
Misc. Service Insurance &	211	1187	71	488	1675	237	14	226	13	184	11	51	24
Real Estate	193	944	79	242	1186	445	38	872	75	1775	150	49	25
Rest., Bars, Hotels, & Motels	164	1042	65	558	1600	47	3	51	3	45	3	7	4
Wholesale Dist.	124	1445	81	346	1791	145	8	219	12	279	15	40	32
Law & Accounting	124	315	72	104	419	85	20	67	16	58	14	21	7
Finance	96	1220	93	92	1312	125	10	143	11	297	23	31	32
Food Dist.	76	399	61	257	656	14	2	24	4	20	3	11	14
Agriculture & Recreation	75	496	45	617	1113	47	4	62	6	77	7	29	16
Entertainment	75	691	16	3518	4209	111	3	227	5	327	8	7	9
Manufacturing	72	1406	81	334	1740	293	17	440	25	668	38	25	35
Transportation	71	852	80	206	1058	74	7	101	10	138	13	11	5
Oil Products	70	525	74	182	707	122	20	86	12	114	16	19	27
Communications	66	578	78	160	738	64	9	95	13	95	13	16	24
Pharmacy	63	234	71	94	328	32	10	27	8	27	8	15	24
Forestry	57	1109	73	401	1510	187	12	168	11	160	11	9	15
Mining	18	3649	96	152	3801	134	4	137	4	120	3	4	22
Engineering	18	282	72	108	390	48	12	47	12	72	18	3	17
Government	14	127	69	57	184	9	5	6	3	10	5	8	57
GRAND TOTALS	2767	26122	65%	13761	39883	4091	10%	5250	13%	7595	19%	624	23%

Note: While the number of firms who listed new jobs they planned to add are totalled here, the analysis of the jobs they planned to add appears in a separate figure in the text.



TABLE III

IV. A., B., C. (1), & D. PROFESSIONAL, TECHNICAL, SEMI-SKILLED, AND MANAGERIAL EMPLOYEES  
 IV. C. (2) WHEN DO YOU TRAIN THE SEMI-SKILLED WORKERS?

Businesses and Industries	No.	Full-Time Employee Classifications			Semi-skilled Employees*			Training for Semi-skilled Employees*				
		Professional	Technical	Managerial	No.	Pct.	No.	Pct.	On Job	After Hours	Other ways**	
		No.	No.	No.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Automotive	367	237	1326	46%	253	9%	1093	37%	319	87%	54	15%
Retail Dist.	295	214	935	29	164	5	1927	59	248	84	20	7
Construction	278	272	741	31	239	10	1164	48	200	72	8	3
Medical	240	776	233	22	39	4	8	1	125	52	8	30
Misc. Service	211	85	415	35	96	8	591	50	154	73	7	3
Insurance & Real Estate	193	231	319	34	49	5	345	37	77	40	6	3
Restrs., Bars, Hotels, & Motels	164	39	195	19	45	4	763	73	102	62	1	5
Wholesale Dist.	124	155	276	19	102	7	912	63	99	80	6	5
Law & Accounting	124	202	102	32	11	4	0	0	33	27	1	1
Finance	96	257	267	22	91	7	605	50	37	38	1	1
Food Dist.	76	22	95	24	46	11	236	59	61	80	1	1
Agriculture	75	43	135	27	65	13	253	51	69	92	3	4
Recreation & Entertainment	75	56	183	27	54	8	398	58	49	65	3	4
Manufacturing	72	138	268	15	89	5	911	72	60	83	4	5
Transportation	71	61	228	27	35	4	528	62	47	66	2	3
Oil Products	70	83	134	26	86	16	222	42	54	77	1	1
Communications	66	110	336	58	28	5	104	18	41	62	3	4
Pharmacy	63	107	31	13	5	2	91	39	46	73	3	5
Forestry	57	44	94	8	44	4	927	84	52	91	3	5
Mining	18	277	381	10	22	1	2969	81	14	78	0	0
Engineering	18	168	69	24	1	1	44	16	7	39	2	11
Government	14	31	31	25	8	6	57	45	7	50	0	0
GRAND TOTALS	2767	3608	6794	26%	1572	6%	14148	54%	1901	69%	137	5%
											129	5%

\* About 20 per cent didn't report on training programs for semi-skilled employees.

\*\* Other ways of training consist of Company Training Courses (18), Schools (15), Company Schools (12), Home Study (10), Company Meetings (7), Special Courses (5), Apprentices Programs (5), Night Schools (4), Seminars (4), Correspondence (2), and Slides and Films (1).

TABLE IV

V. A. ARE YOU SATISFIED WITH THE EDUCATION LEVEL OF YOUR PRESENT TECHNICIAN OR SEMI-PROFESSIONAL EMPLOYEES?  
 B. IF ANSWER IS NO, IN WHAT AREAS WOULD YOU RECOMMEND THAT ADDITIONAL TRAINING FOR FUTURE EMPLOYEES BE DIRECTED?

Businesses and Industries		Educational Levels Satisfactory						Recommended Training									
		Yes			No			Uncertain		General Education		(trade) Technical Training		Combination of first two		Other	
No.		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
367	Automotive	127	35%	160	44%	53	15%	18	5%	105	29%	68	19%	27	7%		
295	Retail Dist.	125	42	102	34	40	13	37	12	33	11	52	18	27	9		
278	Construction	108	39	111	40	44	16	16	6	66	24	56	21	18	6		
240	Medical	168	70	58	24	14	6	25	10	18	7	21	9	14	6		
211	Misc. Service	112	53	61	29	33	16	14	7	41	19	29	14	27	13		
193	Insurance & Real Estate	116	60	51	26	14	7	21	11	10	5	12	6	27	14		
	Restr., Bars, Hotels, & Motels	77	47	34	21	16	10	7	4	19	11	11	7	8	5		
164		52	42	38	31	23	18	14	11	12	10	18	15	17	14		
124	Wholesale Dist.	77	62	31	25	9	7	14	11	5	4	17	14	8	6		
124	Law & Accounting	52	54	28	29	14	14	20	21	6	6	14	14	5	5		
96	Finance	36	47	18	24	12	16	1	1	12	11	10	13	7	9		
76	Food Dist.	35	47	20	27	16	21	3	4	9	12	14	19	3	4		
75	Agriculture																
	Recreation & Entertainment	39	52	14	19	10	13	4	5	8	10	5	7	3	4		
75		30	42	26	36	7	10	5	7	10	14	12	17	5	7		
72	Manufacturing	38	53	15	21	7	10	1	1	8	11	9	13	2	3		
71	Transportation	33	47	19	27	10	14	7	10	6	8	11	16	9	13		
70	Oil Products	27	41	26	39	7	11	9	14	7	11	9	14	9	14		
66	Communications	33	52	12	19	8	13	2	3	3	5	5	8	4	6		
63	Pharmacy	32	56	12	21	9	16	1	2	8	14	7	12	0	0		
57	Forestry	8	44	3	17	4	22	0	0	2	11	4	22	1	6		
18	Mining	10	55	5	28	1	5	0	0	3	17	1	5	2	11		
18	Engineering	6	44	4	28	4	28	0	0	1	7	3	21	2	14		
14	Government																
GRAND TOTALS		1346	49%	852	31%	356	13%	219	8%	382	14%	388	14%	225	8%		

Note: Percentages are figured against total number of responding firms. The percentages do not tally to 100 per cent in most instances, since all did not respond to these questions.

TABLE V

V. C. DO YOU FEEL THE SIZE OR NATURE OF YOUR BUSINESS RESTRICTS YOU FROM HIRING BETTER TRAINED PERSONNEL?

D. IF ANSWER IS YES, CHECK OR WRITE IN WHY THIS HAS NOT BEEN POSSIBLE.

E. WHAT, IF ANY, SHORTCOMINGS HAVE YOU FOUND IN THE TRAINING OF YOUR PRESENT EMPLOYEES?

Businesses and Industries	No.	Are You Restricted		Reasons For Not Hiring Better Trained Personnel*		Training Shortcomings	
		Yes	No	Trained Personnel Not Available	Trained Personnel Can't Afford Salaries	Other Reasons	No. Pct.
Automotive	367	No. 218 Pct. 59%	No. 141 Pct. 38%	No. 115 Pct. 31%	No. 107 Pct. 29%	No. 47 Pct. 13%	No. 155 Pct. 42%
Retail Dist.	295	No. 188 Pct. 64	No. 102 Pct. 34	No. 68 Pct. 23	No. 119 Pct. 40	No. 43 Pct. 14	No. 120 Pct. 41
Construction	278	No. 40 Pct. 14	No. 122 Pct. 44	No. 68 Pct. 24	No. 51 Pct. 18	No. 31 Pct. 11	No. 107 Pct. 39
Medical	240	No. 73 Pct. 30	No. 162 Pct. 67	No. 46 Pct. 19	No. 40 Pct. 17	No. 26 Pct. 11	No. 53 Pct. 22
Misc. Service	211	No. 106 Pct. 50	No. 105 Pct. 50	No. 63 Pct. 30	No. 41 Pct. 19	No. 28 Pct. 13	No. 80 Pct. 38
Insurance & Real Estate	193	No. 75 Pct. 39	No. 114 Pct. 59	No. 35 Pct. 18	No. 39 Pct. 20	No. 13 Pct. 7	No. 79 Pct. 41
Restrs., Bars, Hotels, & Motels	164	No. 101 Pct. 61	No. 49 Pct. 30	No. 42 Pct. 26	No. 45 Pct. 27	No. 31 Pct. 19	No. 36 Pct. 22
Wholesale Dist.	124	No. 68 Pct. 55	No. 52 Pct. 42	No. 26 Pct. 21	No. 33 Pct. 27	No. 18 Pct. 15	No. 45 Pct. 36
Law & Accounting	124	No. 32 Pct. 26	No. 82 Pct. 66	No. 22 Pct. 18	No. 19 Pct. 15	No. 8 Pct. 6	No. 45 Pct. 36
Finance	96	No. 39 Pct. 41	No. 54 Pct. 56	No. 20 Pct. 21	No. 18 Pct. 19	No. 13 Pct. 13	No. 41 Pct. 43
Food Dist.	76	No. 49 Pct. 64	No. 20 Pct. 26	No. 12 Pct. 16	No. 33 Pct. 43	No. 11 Pct. 14	No. 14 Pct. 18
Agriculture	75	No. 45 Pct. 60	No. 26 Pct. 35	No. 16 Pct. 21	No. 21 Pct. 29	No. 16 Pct. 21	No. 22 Pct. 29
Recreation & Entertainment	75	No. 42 Pct. 56	No. 22 Pct. 29	No. 9 Pct. 12	No. 23 Pct. 31	No. 12 Pct. 16	No. 19 Pct. 20
Manufacturing	72	No. 33 Pct. 46	No. 32 Pct. 44	No. 19 Pct. 26	No. 22 Pct. 30	No. 12 Pct. 17	No. 30 Pct. 42
Transportation	71	No. 37 Pct. 52	No. 24 Pct. 34	No. 18 Pct. 25	No. 14 Pct. 20	No. 11 Pct. 15	No. 17 Pct. 24
Oil Products	70	No. 38 Pct. 54	No. 30 Pct. 43	No. 11 Pct. 16	No. 22 Pct. 32	No. 13 Pct. 18	No. 22 Pct. 32
Communications	66	No. 29 Pct. 44	No. 33 Pct. 50	No. 13 Pct. 20	No. 14 Pct. 21	No. 9 Pct. 14	No. 30 Pct. 45
Pharmacy	63	No. 27 Pct. 43	No. 25 Pct. 40	No. 11 Pct. 17	No. 20 Pct. 32	No. 3 Pct. 5	No. 24 Pct. 38
Forestry	57	No. 30 Pct. 53	No. 27 Pct. 47	No. 12 Pct. 21	No. 17 Pct. 30	No. 13 Pct. 23	No. 17 Pct. 30
Mining	18	No. 9 Pct. 50	No. 9 Pct. 50	No. 3 Pct. 17	No. 4 Pct. 22	No. 1 Pct. 4	No. 6 Pct. 34
Engineering	18	No. 7 Pct. 39	No. 11 Pct. 61	No. 5 Pct. 28	No. 4 Pct. 22	No. 1 Pct. 5	No. 7 Pct. 39
Government	14	No. 8 Pct. 57	No. 6 Pct. 43	No. 2 Pct. 14	No. 5 Pct. 36	No. 3 Pct. 21	No. 4 Pct. 28
GRAND TOTALS	2767	No. 1296 Pct. 47%	No. 1250 Pct. 45%	No. 636 Pct. 23%	No. 711 Pct. 26%	No. 363 Pct. 13%	No. 973 Pct. 35%

\* Many of the firms who reported they felt no business-nature restrictions on hiring better trained employees still checked reasons for not hiring them.

Note: While the number of firms who listed training shortcomings are totalled here, the analysis of the specific shortcomings appears in a breakdown in the text.



TABLE VI

VI. A. HOW IS YOUR PRESENT SUPPLY OF TRAINED LABOR?

D. IN THE TECHNICAL VOCATIONS FIELD ALONE, WHAT PERCENTAGE OF LABOR DO YOU EXPECT TO OBTAIN FROM IN-SHOP TRAINING AND UPGRADING PRESENT EMPLOYEES, AND FROM OUTSIDE PRESENT LABOR FORCE?

VII. WHAT, IF ANY, HAS BEEN THE EFFECT OF AUTOMATION IN YOUR BUSINESS OR INDUSTRY?

Businesses and Industries	No.	Supply of Trained Labor*			Technicians Obtained* from			Effects* of Automation	
		Abundant	Adequate	Short	In-Shop	Outside Shop			
		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Automotive	367	12	3%	139	38%	208	57%	96	26%
Retail Dist.	295	13	4	145	49	116	39	74	25
Construction	278	13	5	135	48	123	44	66	24
Medical	240	22	9	137	57	72	30	34	14
Misc. Service	211	8	4	100	47	103	49	54	26
Insurance & Real Estate	193	12	6	99	51	65	34	23	12
Restrs., Bars, Hotels & Motels	164	13	8	77	47	58	35	12	8
Wholesale Dist.	124	7	6	71	62	36	29	31	26
Law & Accounting	124	7	6	55	44	53	43	10	9
Finance	96	1	1	59	61	31	32	35	37
Food Dist.	76	7	9	38	50	21	28	10	14
Agriculture	75	2	3	35	47	21	28	20	28
Recreation & Entertainment	75	6	8	38	51	20	27	19	26
Manufacturing	72	6	8	33	46	26	36	33	46
Transportation	71	4	6	37	52	21	29	18	26
Oil Products	70	4	6	39	55	22	32	49	70
Communications	66	3	4	27	41	33	50	21	33
Pharmacy	63	3	5	17	27	31	49	9	15
Forestry	57	3	5	34	60	18	31	18	32
Mining	18	0	0	13	70	4	22	5	21
Engineering	18	2	11	7	39	9	50	5	30
Government	14	0	0	10	71	4	28	7	51
GRAND TOTALS	2767	149	5%	1347	49%	1097	40%	649	23%
								411	15%
								589	21%

\* Respondents to these queries varied in numbers, and in few cases did the totals equal 100 per cent of the firms submitting replies.

TABLE VII

VI. C. CHECK SOURCES ON WHICH YOU DEPEND FOR SECURING YOUR LABOR SUPPLY. (MORE THAN ONE MAY BE CHECKED)

Businesses and Industries		Sources Used in Securing Labor Supply															
		Voluntary Application		Personal Contact		State Employment		Advertising		College Placement		Unions		Up-Grading		Other*	
No.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
Automotive	367	210	57%	243	66%	89	24%	95	26%	15	4%	30	8%	80	22%	18	5%
Retail Dist.	295	163	55	205	69	84	28	48	16	21	7	14	5	49	17	14	5
Construction	278	134	48	162	58	86	31	15	5	13	5	143	51	47	17	9	3
Medical	240	123	51	163	68	53	22	41	17	20	8	2	1	12	5	10	4
Misc. Service	211	112	53	144	68	64	30	52	25	17	8	48	23	30	14	21	10
Insurance & Real Estate	193	68	35	128	66	49	25	22	43	18	9	2	1	15	7	17	9
Restrs., Bars, Hotels, & Motels	164	92	56	97	59	42	26	39	24	2	1	28	17	8	5	7	4
Wholesale Dist.	124	60	48	90	72	46	37	29	23	10	8	8	7	32	26	5	4
Law & Accounting	124	55	44	14	60	40	17	24	19	24	19	0	0	6	5	9	7
Finance	96	71	74	58	60	30	31	16	17	15	16	1	1	31	32	9	9
Food Dist.	76	44	58	48	63	14	18	9	12	0	0	6	8	8	10	2	3
Agriculture	75	39	52	59	79	18	24	8	11	5	7	0	0	13	17	2	3
Recreation & Entertainment	75	38	51	42	56	12	16	10	13	15	20	5	7	10	13	2	3
Manufacturing	72	48	67	45	62	28	39	16	22	3	4	11	15	20	28	1	1
Transportation	71	29	41	37	52	19	27	15	21	6	8	8	11	14	20	5	7
Oil Products	70	41	58	49	70	7	10	6	8	3	4	1	1	3	4	8	12
Communications	66	33	50	34	52	19	29	27	41	8	12	10	15	17	26	8	12
Pharmacy	63	31	49	42	67	7	4	8	13	13	21	0	0	4	6	3	5
Forestry	57	30	53	41	72	27	47	2	3	0	0	0	0	13	23	1	2
Mining	18	8	44	11	61	4	22	2	10	3	17	5	21	6	33	0	0
Engineering	18	11	61	15	83	3	17	1	5	7	39	1	5	9	50	2	11
Government	14	8	57	8	57	3	21	2	14	2	14	0	0	3	21	1	7
GRAND TOTALS	2767	1448	52%	1735	63%	744	27%	487	18%	220	8%	323	12%	430	15%	154	6%

\*Other sources consist of Associations, Private Employment Agencies, High Schools, Recommendations, and Trade Schools.





**DISCARDED**

MAY 20 1969

LIBRARY  
UNIVERSITY of MONTANA



